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# CLEMSON COLLEGE LAND UTILIZATION PROJECT

UNITED STATES DEPARTMENT OF AGRICULTURE  
AND CLEMSON COLLEGE



Lake Issaqueena Dam

ISSUED MARCH 1938



IN THE CLEMSON COLLEGE LAND USE PROJECT, established by the United States Department of Agriculture and South Carolina's Clemson College, 23,000 acres of worn-out farms and idle lands are being developed into productive forests, pastures, and public recreation areas as a contribution to the social and economic welfare of the people of this State and region.

When the project was begun in 1934, the land now purchased by the Government was either lying idle, or being used for the production of small, unprofitable crops of cotton and corn by families grown poor on the sterile soil.

The area now provides for the people of northwestern South Carolina extensive play areas along the shores of a new 135-acre lake. Woodlands have been improved, and new forests planted. The rapidly wasting soil is being conserved by the restoration of cropland to natural cover. Methods of pasture improvement are being demonstrated for southern farmers, and wild game is being brought back in increasing numbers.

Visitors are invited to inspect the project freely and make use of its lake, drives, and picnic areas. Detailed information concerning the demonstrations in erosion control, reforestation, pasture improvement, and wildlife conservation may be obtained from the office of the project manager in Clemson.

### A Typical Piedmont Area

The Clemson project area was selected for this demonstration in better land use because it presented, in serious form, problems that exist throughout a large portion of the southern Piedmont region. Fields on the project were gullied and stripped of much of their topsoil by unchecked erosion. What soil remained was near exhaustion from continued planting of cotton.

Soil that has lost its fertility cannot support farms, yet on the project area 180 families, most of them in desperate poverty, were attempting to wring a living from the land. Many families were tenants and croppers, whose insecure, year-by-year tenure gave them little reason for conserving or improving the soil. Woodlands and wild game suffered likewise from the inability of land users to apply conservation principles.

That this distressing condition had not always existed is shown by the dilapidated remains of old plantation houses occupied generations ago by wealthy, cultured families of the old cotton aristocracy. In one of the homes located on a now submarginal tract, marble mantelpieces, imported



Spanning Six Mile Creek, this triple-arched bridge on the Park Road was constructed entirely by relief labor, and largely with native materials





These corrals have been built for the sheltering, feeding, and examination of the cattle that will be run on the project's 2,200-acre improved pasture

from Rome a century ago, bespeak the prosperity which these plantations formerly enjoyed. Falling into decay, this once magnificent home now symbolizes the inevitable collapse of a society that wastes and abuses its land.

## Objectives of the Project

The Government has purchased and improved the 23,000 acres at Clemson as part of a Nation-wide program for the better use of land resources. The immediate purpose was to restore to some productive use the land which had outlived its value for farming, and to help the families stranded on barren soil to move to better farms. The larger objective, however, is one of demonstration: to point out by concrete example how millions of acres of worn-out and cast-off lands in the old Cotton Belt can be reclaimed to fill the social and economic needs of people who inhabit this region today.

## Forestry

Vigorous young forest seedlings throughout the Clemson project area demonstrate that although the land is no longer suitable for production of cotton or corn, it is well adapted to the growing of trees. The major portion of the project lands are being scientifically developed as a future forest of great potential value.

Woodlands on 8,800 acres of the project have been improved by the removal of old and undesirable trees. Protection against fire has been insured by the development of truck trails and roads that make it possible for fire-fighting crews to reach all parts of the forest quickly. Two 100-foot lookout towers have been located at strategic points from which the whole area can be surveyed, while telephone lines have been installed to facilitate rapid reporting of any fire discovered.

Most significant of the forest developments, however, is the planting of more than a million young trees on lands that were formerly devoted to unprofitable farming. These plantings serve a multiple purpose—they provide a future crop of value, and also act as a means of stopping the destructive erosion of formerly cultivated lands. Shipmast locust, a valuable and quick growing tree, has been planted in severely gullied fields to stop soil washing. More than 1,000 acres have been planted to slash and loblolly pine.

GENERAL DEVELOPMENT OF

NORTHERN AREA



# CLEMSON COLLEGE PROJECT

## SOUTHERN AREA



- County roads
- - - Area boundary
- ..... Hiking trails
- ▨ Parking areas
- 🏠 Wardens unit

- 🌲 Forestry
- 🐄 Grazing
- 🌱 Reforestation
- 🌊 Stream and pond development
- 🐟 Fish rearing pond

- 🗼 Lookout tower
- 🦋 Wild life
- 🔥 Recreation
- 🌿 Erosion control
- 🐄 Corral and silo



Recent perfection of the process for the manufacture of pulp and kraft paper from southern pine lends a new importance to the forestry demonstrations at Clemson. An industrial development of tremendous economic importance to the South is already at hand. The Clemson project is demonstrating how submarginal land, no longer profitable for agriculture, can be given a new economic value through the production of pulpwood for this nascent southern industry.

Millions of acres of cut-over forest land throughout the United States and "ghost towns" left in the track of wasteful forest exploitation, emphasize that conservation must be practiced if this new forest industry is to contribute something of permanent economic value, rather than merely another boom and collapse in land values, trade, and employment. Demonstrations in forest conservation at Clemson are intended to help promote a wiser use of the land from which the raw material for this industry comes.

## Recreation

Outstanding among the improvements made on the Clemson project area are the recreational facilities to serve the growing population of the industrial and agricultural communities of northwestern South Carolina. Swimming, boating, camping, picnicking, hiking, and fishing are among the chief activities for which the project has made provision.

Lake Issaqueena, located in the rugged northern portion of the project, is the center for most of the recreational features. For 2 miles this body of water, created by the construction of a large dam, winds among the foothills of the Blue Ridge, while along its wooded shores, easily reached by automobile, are picnic areas, a bathing beach, and footpaths that lead off into wilder portions of the native hardwood forest. Issaqueena, meaning "deer head" in the Creek Indian tongue, was the name of an Indian woman who saved the lives of the early settlers of this locality by warning them of an impending raid.

Wayside parks, including picnic grounds with outdoor fireplaces, tables, and auto-parking space are also located on the main road from Clemson to Seneca near the Seneca River.



In these ample fish hatcheries are being reared 120,000 black bass and 46,000 bream to feed the hooks and egos of fishermen on Lake Issaqueena and its rivers



Already, these 8-year-old slash and long-leaf pines have grown to many times the height of the school children who planted them

## Pasture Improvement

Agricultural authorities at Clemson College are conducting demonstrations in pasture improvement on 2,200 acres of the project area, as a means of developing additional economic use for the submarginal lands. Southern farms generally need more grass—to stop erosion on sloping lands and to provide pasture as the basis for diversified farming with greater emphasis on livestock.

Several different types of grass, including lespedeza, crab grass, Bermuda grass, and bluegrass, have been seeded in the pasture section, and experiments will be carried out to determine which varieties are best suited to the land. Farmers and others interested in agriculture are welcome to inspect these developments and discuss the work with representatives of Clemson College.

Work on this pasture unit has included the building of corrals and sheds for cattle. Like all other developmental activities, this work has been done by relief labor provided through the Works Progress Administration.

## Wildlife

An abundance of wild game is native to the Clemson project area. Destruction of feed crops, and lack of protection in the past caused a steady dwindling of all forms of wildlife. Both fish and game birds are now being brought back by the development and management of the purchased lands. This year, for example, the number of quail noted on the project is five times as large as the number counted 2 years ago.

Planting of game food and cover crops has been carried on throughout the area, and is largely responsible for the increase in wildlife. As part of the erosion control work, strips of peas, segrain, hegari, millets, and other bird foods have been established on formerly cultivated fields. Under proper conservation increased opportunities for hunting should be possible,



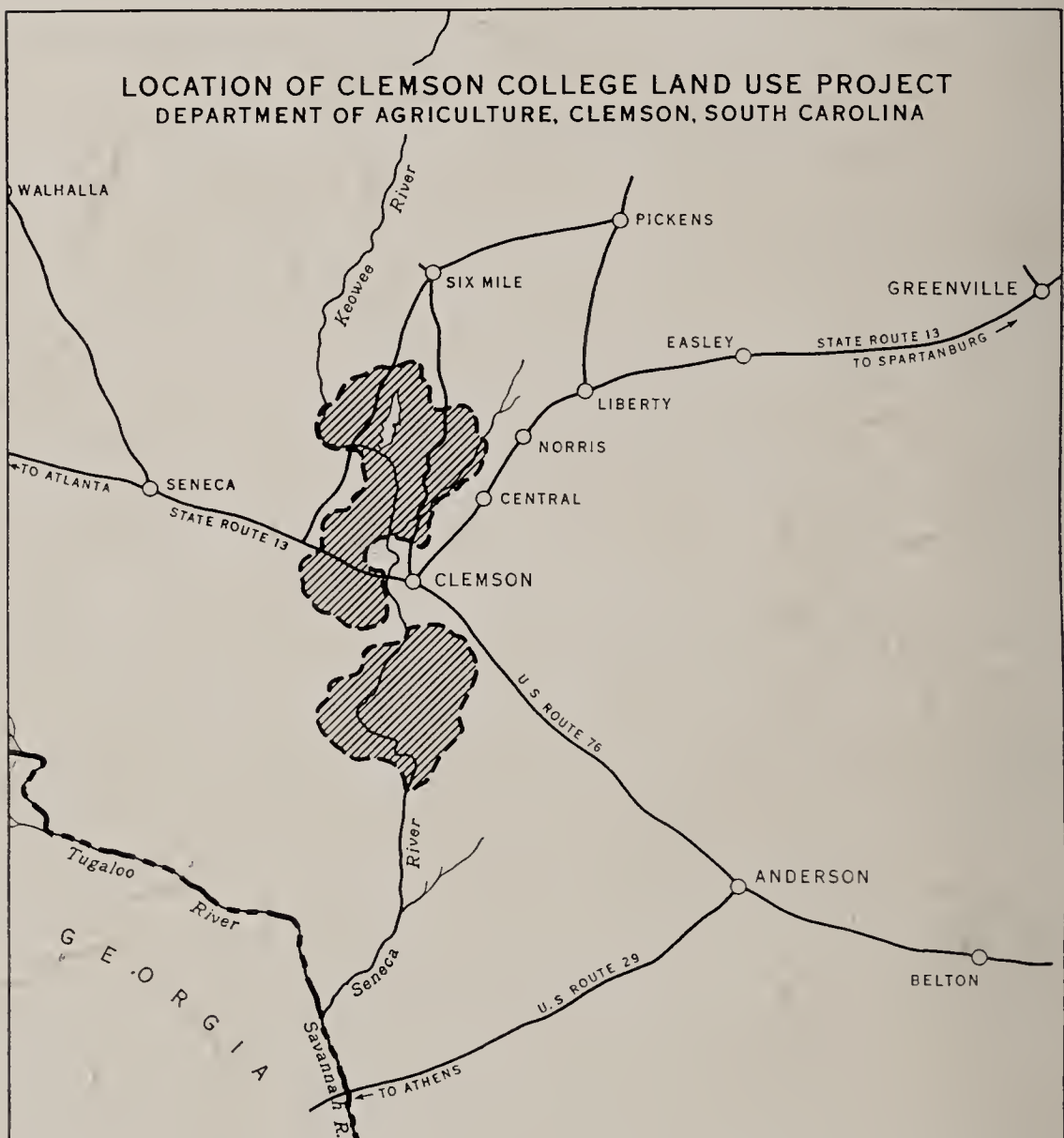
not only on the project area but on adjoining lands which will benefit from the growing numbers of game.

Fishing is possible on both lakes and streams that have been stocked with bass and bream. In six 1-acre ponds constructed during the past year, 120,000 black bass and 46,000 bream have been reared for stocking purposes.

Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture

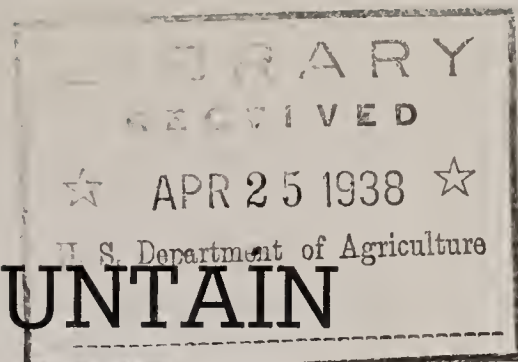
W. A. Hartman,  
Regional Director.

C. W. Rentz, Jr.,  
Project Manager.





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# THE MAGAZINE MOUNTAIN LAND USE PROJECT

A 90,000-Acre Demonstration in Better Land Use  
for Forestry, Recreation, Wildlife, Grazing



Spring Lake Dam

DESIGNED TO PROMOTE PERMANENT IMPROVEMENT of land use in western Arkansas, the Magazine Mountain land-use project is a demonstration of how wasted and idle land can be developed for the social and economic benefit of the people. On a 90,000-acre area in Logan and Yell Counties, the project is converting ravaged and abandoned land into a recreation spot of potential magnificence, generous pastures, a haven for wildlife, and forests of rich promise for the future.

At its inception in 1934, the project found that families in the area were waging a losing struggle for a living against effects of the 75-year devastation which had pillaged the soil and the woodlands.

This once desolate region now provides a 5,000-acre recreation area serving the people of Arkansas and adjoining States. A broad expanse of healthy forest is being built up through protection and encouragement of existing stands and through extensive new plantings. Several pasture areas demonstrate for farmers the rewards of careful range husbandry. Throughout the project wild game and birds have returned in annually increasing numbers.

Visitors are invited to inspect the project freely and to make use of its two lakes, its scenic highways and drives, and its picnic areas. Detailed information concerning the demonstrations in erosion control, reforestation, pasture improvement, and wildlife conservation may be obtained from the office of the project manager in Paris, Ark.

The United States Department of Agriculture has acquired and developed the Magazine Mountain tract as part of a national program for better use of



UNITED STATES  
DEPARTMENT OF AGRICULTURE  
MAGAZINE MOUNTAIN  
FORESTRY, GRAZING, GAME & RECREATION  
PROJECT AK-1 REGION VI

SCALE OF MILES  
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LEGEND

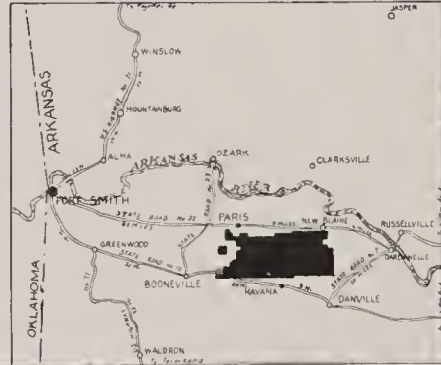
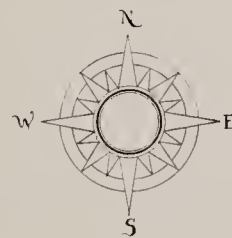
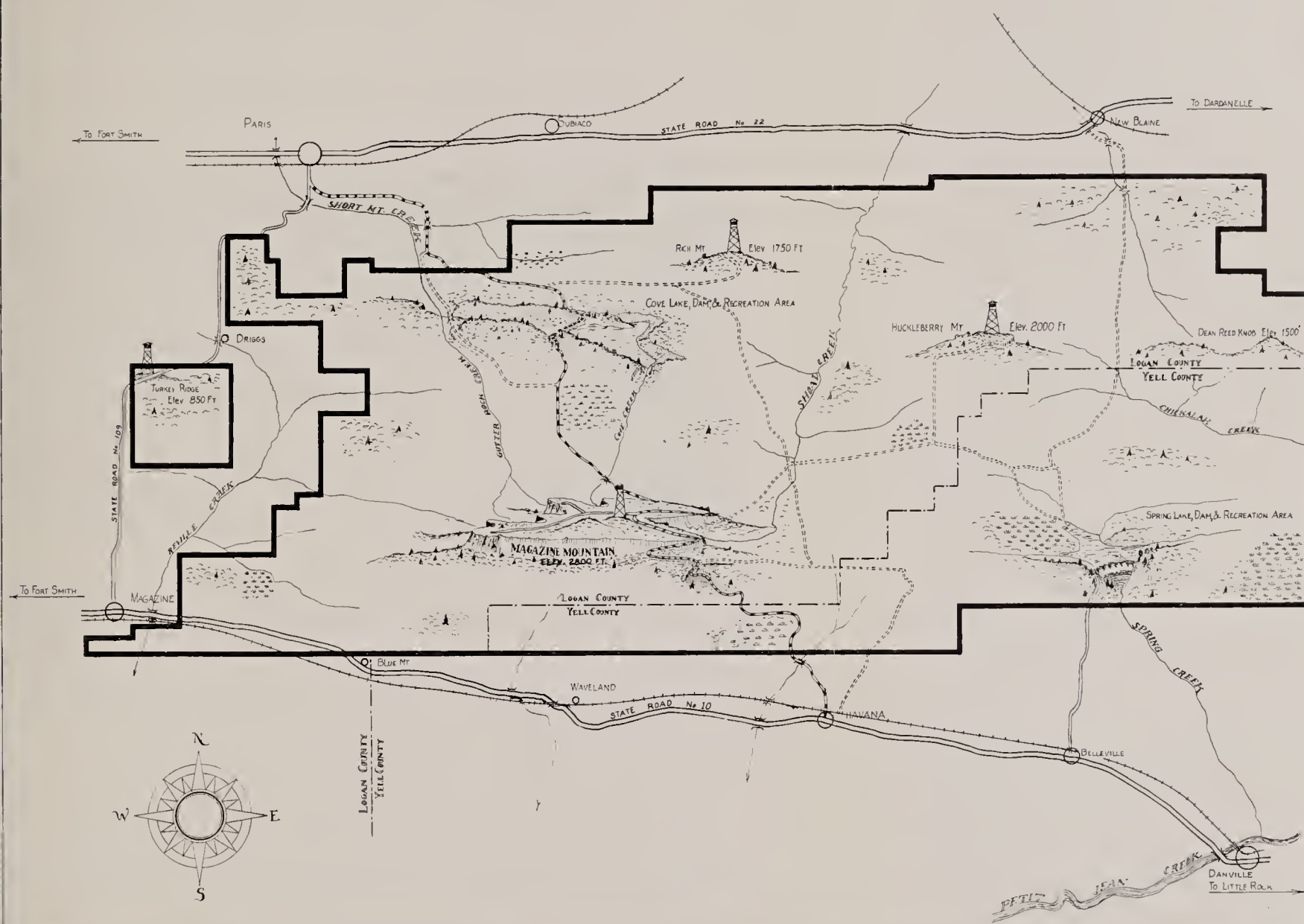
--- PROJECT BOUNDARY LINE

--- HIGHWAYS

--- GRADED ROADS

FOREST

PASTURE





land resources. The immediate purpose was to restore to some productive use land that no longer gives returns from farming and to help families who were stranded on such acres to move to richer ground. The extensive development work also afforded relief jobs to hundreds of local people. In the large view, however, the objective is to conduct a demonstration that will show in detail the methods whereby millions of similar acres of land can be restored to uses that fit the social and economic needs of the people.

Of the acreage involved in the project, by far the largest portion has been developed as a demonstration in approved forestry. Four lookout towers, connected by telephone lines, have been built, providing for quick discovery and reporting of fire anywhere in the project. Thousands of acres have been improved with fire breaks, and barren areas have been planted with seedling trees.

In the heart of the project area towers Magazine Mountain, dominating the territory for many miles around. Magazine Mountain is 2,800 feet above sea level, the highest point between the Appalachians and the Rockies except for South Dakota's Black Hills far to the north. Included in the project area also are Rich, Huekleberry, and Flat Top Mountains. Atop Magazine Mountain is an 1,800-acre plateau, offering scenic and recreational attractions unequalled for many miles.

With this naturally beautiful site as a basis, the project has developed a recreation area that now offers swimming, boating, hiking, camping, picnicking, fishing, and other activities. The people for whom these facilities were planned have never before had such play areas,

In this development, the construction of two dams and the impounding of lakes at each has been a major feature. Cove Creek Lake covers 170 acres and Spring Lake is 88 acres in extent. A park road more than 4 miles long was blasted and graded from the side of the mountain and 20 miles of other highways were built, together with numerous trails and paths. A bathhouse, boathouse, sand beach, picnic and parking areas, and cabins for overnight or week-end visitors are available to the public.

Throughout the Magazine Mountain project area are pastures, amounting in all to nearly 15,000 acres, which are at once a demonstration of proved methods of improving grass stands and a testing ground for new methods. On land that was eroded raw 3 years ago, Bermuda and other grasses provide grazing areas. Experiments with other grasses are also being conducted.

As a result of the restoration of natural cover, the planting of feed and the provision of adequate protection, the depleted wildlife is now coming back rapidly. The two lakes are being stocked with fish. Under proper conservation, added opportunities for hunting and fishing should develop, not only in the project area, but on adjoining lands that will share in the benefits of the increased wildlife.

It is planned to designate the United States Forest Service as the agency to administer the Magazine Mountain area in the future. Its wide experience in the development of forest areas, not only for timber production, but also for grazing and public recreation, ensure the management of the area for the greatest all-round benefit of the State and region in which Magazine Mountain stands.

## Land Utilization Program, Bureau of Agricultural Economics

### United States Department of Agriculture

B. M. Gile,  
In Charge of Region.

V. D. Hill,  
Project Manager.

# THE BOSTON MOUNTAIN LAND USE PROJECT



Cold Springs Lake

**P**RIMARILY A DEMONSTRATION OF how an area that has outlived its usefulness as farmland can be adapted to forestry and wildlife conservation, the Boston Mountain land use project in northwest Arkansas was started in 1934 as part of a Nation-wide campaign to put the land to uses for which it is best suited.

At the inception of the project, which covers 35,000 acres, the 232 families living in the area were able to wrest an average cash income of only \$75 per year from the barren soil. The soil was not adapted to crop farming on a continuous basis, and intensive cultivation and erosion had destroyed most of the topsoil. The project was begun in an effort to relieve the distress of these families by enabling them to move to better farms and to demonstrate how worn-out and idle land could be turned back into productive use.

Today its forests, recreation areas, and wildlife testify to the values that can be derived from such land by proper use. Visitors are invited to inspect the project freely, and to make use of its lakes, drives, and picnic areas, and to enjoy the wild beauty of the setting. Detailed information as to the forestry and other demonstrations may be obtained from the office of the project manager in Van Buren.

Outstanding in the development of the project has been its forestry work. This illustration of adjusted land use has the greatest significance for the South as a whole, and particularly for the region surrounding the project. The value of eroded, burned- and cut-over acres as a potential source of supplemental farm income is second only to the importance of forests in protecting the soil from erosion.



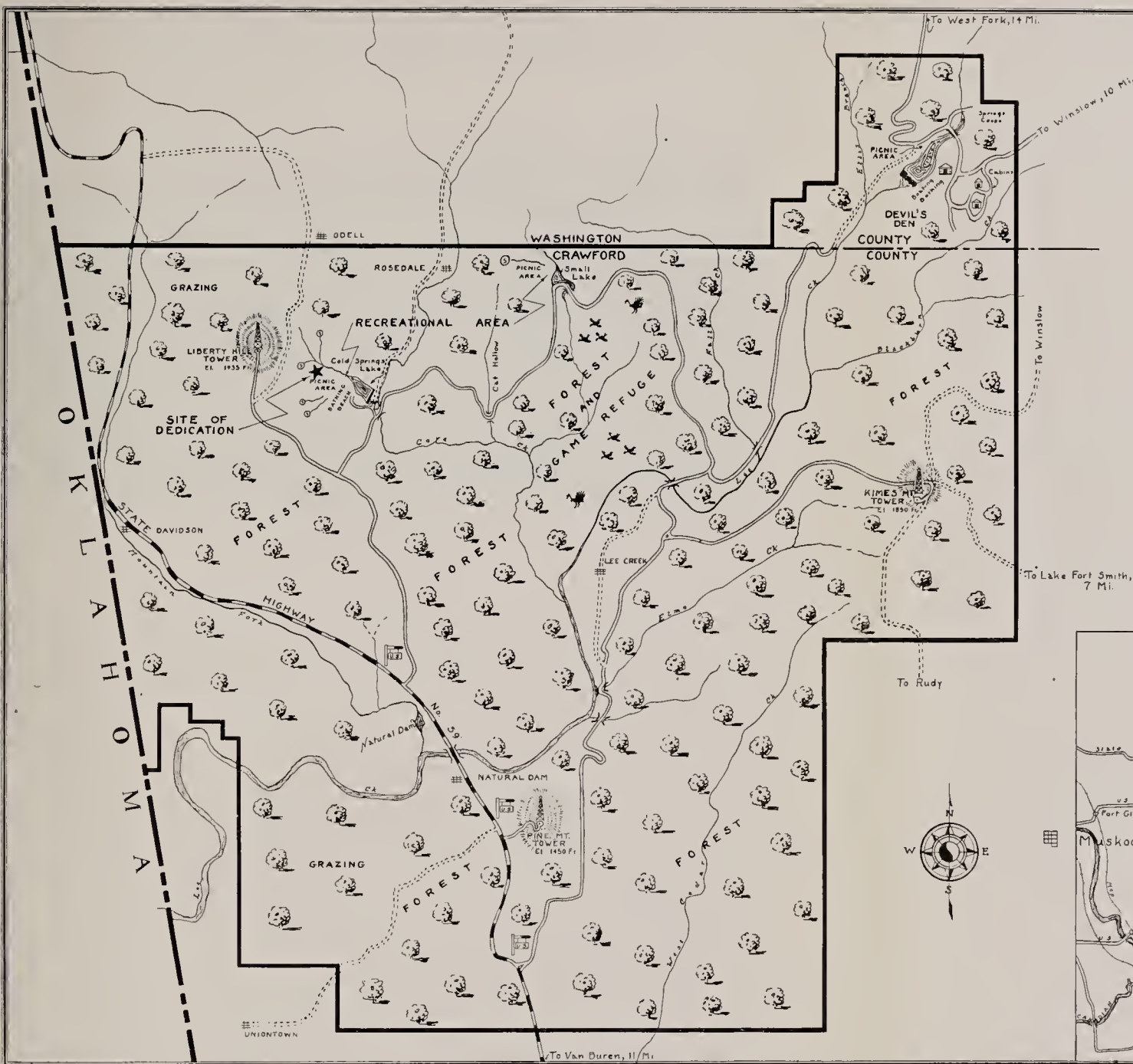


UNITED STATES  
DEPARTMENT OF AGRICULTURE  
BOSTON MOUNTAIN FORESTRY,  
GRAZING AND  
RECREATION PROJECT.  
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LEGEND:

- Project Boundary
- Highway
- Park Road
- Trail
- Bridge
- Spring



At the Boston Mountain project, the major part of the land is being developed into a forest of great potential worth. Approximately 160,000 short leaf pine seedlings and 200,000 black locust seedlings have been planted on formerly abandoned fields—an impressive development.

Much has been done to encourage existing stands of forest and to protect them against fire. Three 100-foot steel towers, connected with nearby cabins by 22 miles of telephone lines, stand as sentinels from which watchmen can report possible fires in every part of the project area. Fire breaks have been built and other types of protection afforded. These improvements make possible the steady development of woodlands as a source of future income and an addition to the scenic beauty of the region.

Contributing to the protection of the area are 42 miles of gravel surface roads, including three bridges and spillover crossings, constructed in the development of the project.

This system of roads also makes the area more readily accessible for recreation seekers. Although development of play areas has been incidental to the major objectives of the program, the natural beauty of the rolling hills and steep slopes within the project renders it highly attractive to pleasure seekers.

A leading recreational attraction is Cold Springs Lake, a 3-acre body of water in the northwest part of the project fed by bubbling springs which afford a continuous flow of water. A pool has been formed 6 miles from Barker Gap and within the project, by use of a road fill as a dam. On the shores of this pool a picnic area, with running spring water and 5 fireplaces, has been developed.

Northwestern Arkansas originally had an abundant wildlife of numerous kinds. Destruction of feed crops and lack of protection in the past had caused a thinning which had almost eliminated wild birds and animals. A major aim of the Boston Mountain project is to bring back this wildlife. Through restoration of cover and feed by means of the forestry development and plantings, development of water supply, and protection against indiscriminate hunting, all forms of wildlife now are returning in annually increasing numbers.

Throughout the planning and development of the project, the local people have taken active interest and have participated extensively. It is urged that this continue in the future so that the project can achieve its larger aim of demonstrating how the land of this type in Arkansas may be used in ways to give the greatest social and economic benefit to its people.

Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture

B. M. Gile,  
In Charge of Region.

Dee R. Eoff,  
Project Manager.



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# THE NORTHWEST ARKANSAS LAND USE PROJECT

for: FORESTRY  
RECREATION  
GRAZING  
WILDLIFE

An 18,000-Acre Demonstration in Better Land Use



THE RESTORATION TO PRODUCTIVE USE of land resources that have been subjected to years of depletion and waste is demonstrated in the 18,000-acre northwest Arkansas land use adjustment project, supervised by the Bureau of Agricultural Economics and developed in cooperation with the University of Arkansas.

Desolated land, so worn by crops or skinned by erosion as to forbid further use for farming, is being shifted in this project to the uses in which it can best be made to serve a beneficial purpose. In a section where too many families were previously able to eke out a meager living on the barren soil only by some form of public assistance, this restoration to beneficial use has proceeded on a wide scale. Productive grazing areas have been developed on soil that 3 years ago was rapidly washing away. A halt has been called to destruction of woodlands in the project area and new forests planted. Wild game is returning in growing numbers after near extinction. Southern farmers may find here examples of improved methods in these and other fields of agriculture, and experimental plantings of trees, grasses, and crops are yielding new valuable information as to future use of the land.

Visitors are invited to inspect the project freely, and to make use of its lake, drives, and picnic areas. Detailed information concerning the demonstrations in erosion control, reforestation, pasture improvement, and wildlife conservation may be obtained from the office of the project manager at the administration building on the lakefront.

## The Problem in the Land of the Ozarks

Here, in and near the famed Ozark Mountains, was an example of the extremes to which unthinking use of land may lead. Problems characteristic of the region and the South are local manifestations of a misuse of land that is national in scope. In the northwestern Arkansas area, evidences of distress common to many others in the South led to selection of the site for the land use demonstration project.

Continuous cultivation had mined and eroded much of the soil, while indiscriminate cutting of timber and burning over the land "to destroy the



Wedington Lake, looking northwest from the dam and spillway. At the foot of the dam is the 5-acre tree nursery of the project, irrigated from the lake. Planting and other development was not complete when this picture was made



A flint hill, typical of the project area, that has been intensively cultivated to strawberries until serious erosion has developed. On such hills the project is bringing back a natural protective grass cover

ticks” had also destroyed much of the forest. Natural pastures had been plowed for crops, then abandoned, thus accelerating the evils of erosion. Insecurity of the people on such land aggravated the problem. Many of them tenants, their year-to-year status gave little reason for saving the soil or improving the properties. The inevitable subsidies and relief payments demanded from State, local, and National Governments resulted from these problems. Private land users were unable to apply conservation principles that would check the depletion of soil, forests, and wild game.

Yet there was abundant evidence that the area had many possibilities inviting development for other uses than for crops. Native grasses of great value as forage required only proper introduction and encouragement to become great economic assets. Some farm land was capable of future grass and forest production if wisely handled. The forests offered both sanctuary for wildlife and the basis for a profitable rural industry if soundly managed. Finally, recreation sites were plentiful in a section ideal for vacationers and lacking in adequate outdoor play areas.

## Objectives of the Project

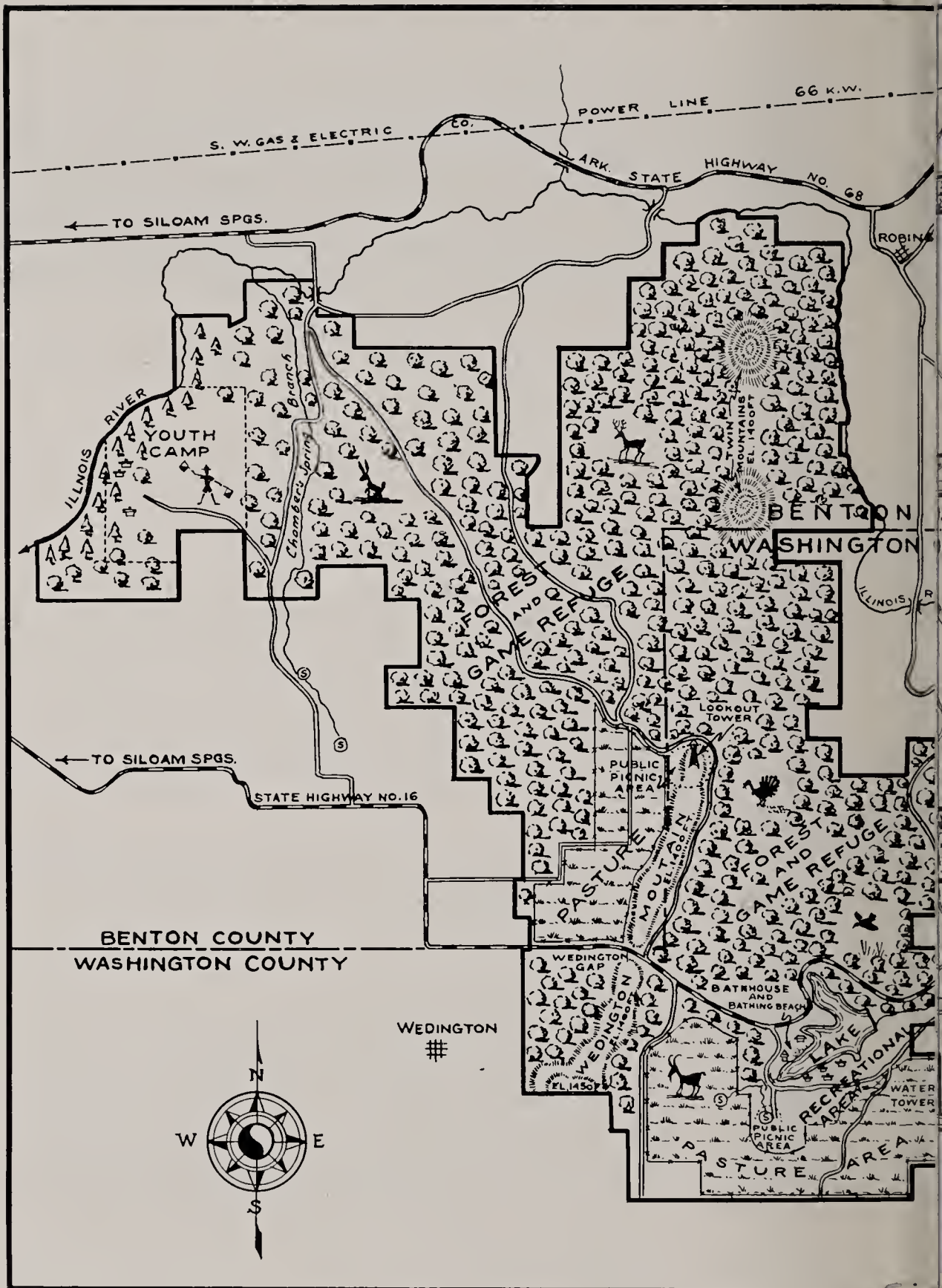
The northwest Arkansas project is one of several such projects which have been developed by the Government in a Nation-wide campaign to promote wise, conservative use of the country’s land resources. Its immediate purpose was to restore to productive use land which had been drained of farming value, and to help families who were stranded on poor soil to move to better farms. A larger objective was that of demonstration: To show how it is possible to improve the use of land in the Ozark region to fit the present and future needs of the people who live on it.

## Pasture Improvement

Of special importance to a demonstration of directed land use in the area is pasture improvement: The economic significance of livestock in the South both for improvement of the soil and for attainment of better balance in agricultural production, emphasizes this point. On the University of

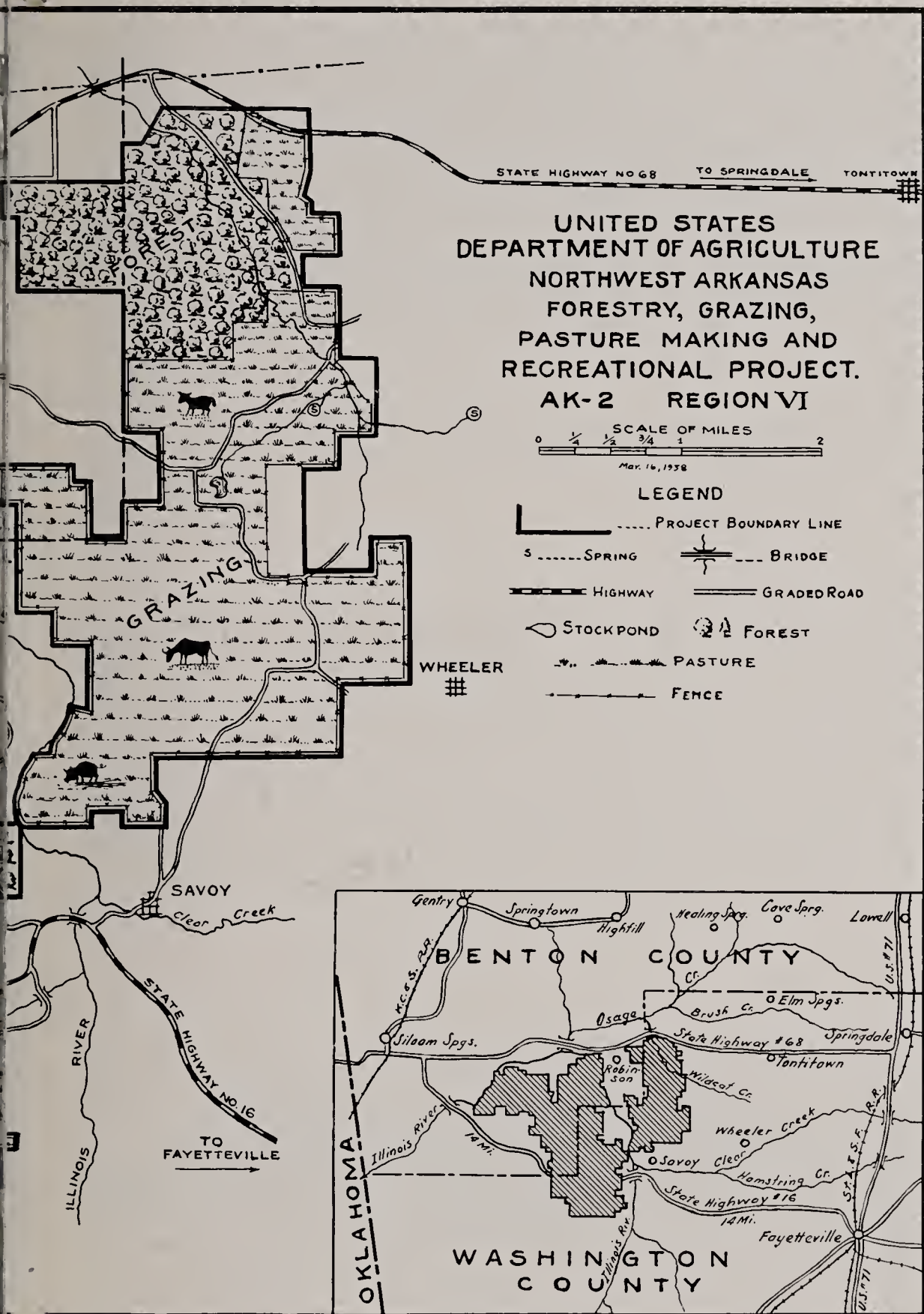


# GENERAL DEVELOPMENT OF NC





# NORTHWEST ARKANSAS PROJECT



Arkansas project, nearly 4,000 acres, embracing most of the land formerly used for crop farming or too heavily grazed, are being developed into improved pasture as a demonstration by the State university.

Characteristic of the project area are the flint hills, which, when first cleared, are well adapted to commercial strawberry production. Intensive cultivation of that crop soon depletes the soil and induces erosion. This resulted in extensive abandonment of such acreage by growers who were seeking new land. Seeded to pasture grasses, these flint hills are proving to be valuable grazing areas.

On these pastures, Bermuda grass and lespedeza form the principal combination used in reseeding and development. The combination has proved highly successful. Land which was sadly depleted when the project was started now is covered with excellent stands of these grasses. About 3,000 acres are now covered with Korean lespedeza, from which in 1 year 11,000 pounds of seed have been harvested. In addition, the project has developed extensive stands of bluestem grass, a native forage crop equal in palatability and food content to any imported provender grasses, and its encouragement outside the project area is being urged. Many natural water holes and springs have been developed for stock water. The pasture areas on the project are principally north of Savoy, south of the recreational area, and west of Wedington Mountain. The pastures are fenced for leasing to the public.

## Forestry

Of the project's total acreage, by far the largest part, 14,000 acres, is devoted to improvement of present stands of forest and planting of new trees. Prominent in this phase of the program is protection of existing woods against fire. To this end, a 100-foot steel tower has been constructed at the north end of Wedington Mountain, which provides a lookout for quick discovery and suppression of possible forest fires throughout the project area. The public is invited to use this tower as an observation platform but great care in such use is urged.

The extent of the forestry development is indicated by the fact that 350,000 tree seedlings have been set. In the ridged fields just north of State Highway 16—fields formerly eroded to the raw—plantings of walnut black locust, several species of pine, and other trees are easily seen by the



The bathhouse on Wedington Lake, built entirely of native materials from the project area. The boat house, administration building, and other structures are similar in design and construction





One of the modern cabins overlooking Wedington Lake, built and furnished with material from the project. All are equipped with electricity and running water

public. Near at hand for visitors is a 5-acre nursery established at the foot of the dam which forms the project lake. The nursery will be irrigated from this lake. A notable contribution to this phase of the work is the extensive experimental planting of trees new to the region but of great potential value. Much of the planting stock required was produced in the project nursery.

## Wildlife

Forest areas on the project provide food and refuge for wildlife. In addition, 1,000 acres of open fields within the forest areas have been planted to such foods for birds and game as lespedeza and sesbania. The lake provides a new inducement to wildlife and much of its development has been done with this end in view. Deer and wild turkey are to be introduced and the lake has been stocked with fish. Before the lake was flooded fish harbors were built, and shallow water has been planted to aquatic plants. A study by the University of Arkansas has shown that the wildlife program has greatly increased the number of quail and squirrel as well as the carrying capacity of the area for these birds, squirrels, and other wildlife.

## A Place to Play

Central in development of the excellent natural recreation sites has been the impounding of the 100-acre lake. This body of water is formed by an earth-fill dam approximately 1,000 feet long and 300 feet wide at the base. The spillway at its southern end was blasted from solid limestone.

About the lake there is a considerable development which has proved a boon to residents of an area extending many miles from the project. On the shore are a boathouse, bathhouse, eight cabins, and a lookout shelter, while on ridges about the lake are other cabins—all available for public use. All of these have running water, sewage, and electricity. Three picnic areas likewise have been built for the public. One is reached by a short park road running southwest from the project pump house, another is on the western slope of Wedington Mountain, and the third is immediately in front of the bathhouse.



All of the construction was accomplished with the use of native materials, the stone being quarried and the timber cut on the project, and was done by relief workers furnished through the Works Progress Administration. The result is a recreational center for a wide territory that was previously devoid of such facilities, offering, among other activities, swimming, boating, camping, picnicking, hiking, and fishing.

## A Cooperative Undertaking

A primary aim in development of this project has been to make it fit a need in its particular environment. In the achievement of that aim, the fullest cooperation by local and State agencies, and by individuals, was sought and obtained. Eminent in this cooperation has been the University of Arkansas, which is situated at Fayetteville, 14 miles from the project. The University assisted generously in planning the project at its inception and in development of every phase as the work progressed. The Department of Agriculture, through a formal leasing agreement, plans to designate the university as the agency to administer the project for the further promotion of better land use in the State.

Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture

B. M. Gile,  
In Charge of Region.

C. B. Wiggans,  
Project Manager.

# THE NATCHEZ TRACE LAND USE PROJECT

A 26,000-Acre Demonstration in Better Use of Land

for:

FOREST DEVELOPMENT

RECREATION FOR ALL

PASTURE IMPROVEMENT

WILDLIFE CONSERVATION



UNDERTAKEN IN 1934 AS PART OF A NATIONAL EFFORT to improve use of land resources, the Natchez Trace land use project of the Bureau of Agricultural Economics, in Chickasaw and Pontotoc Counties, is converting 26,000 acres of exhausted and idle farm land into fruitful pastures, valuable forests, and recreation areas.

Inspection of the project by visitors, and their use of its 181-acre Davis Lake, drives, and picnic areas, is invited. Detailed information concerning the demonstrations in erosion control, reforestation, pasture improvements, and wildlife conservation may be obtained from the office of the project manager in Okolona.

Notable among the improvements made by the project in the area are the recreational facilities giving opportunity for enjoyment to families throughout northeastern Mississippi. This development offers many activities, among which are boating, swimming, fishing, hiking, camping, and picnicking.

The heart of the play area is Davis Lake, formed by an earth dam 2,000 yards long and 204 feet wide at the base. A sanded beach invites bathers and swimmers. For canoeing and boating, two docks are available. On a grassy wooded knoll overlooking the glittering stretches of the lake stand 13 family-sized cabins, provided with running water, electricity, sewage disposal and other conveniences. The cabins are especially attractive for rural families wishing to spend 1-week or 2-week vacations.

Ample picnic grounds and parking spaces have been built, while water for picnickers and cabin residents is afforded by a 900-foot well drilled nearby.

The project has not limited itself to actual construction of the recreational area, but has built 7 miles of standard highways and 5 miles of park roads to render it readily accessible.

These roads are of great assistance to another phase of the project—its forestry demonstration—for they give added protection against possible

All of the construction was accomplished with the use of native materials, the stone being quarried and the timber cut on the project, and was done by relief workers furnished through the Works Progress Administration. The result is a recreational center for a wide territory that was previously devoid of such facilities, offering, among other activities, swimming, boating, camping, picnicking, hiking, and fishing.

## A Cooperative Undertaking

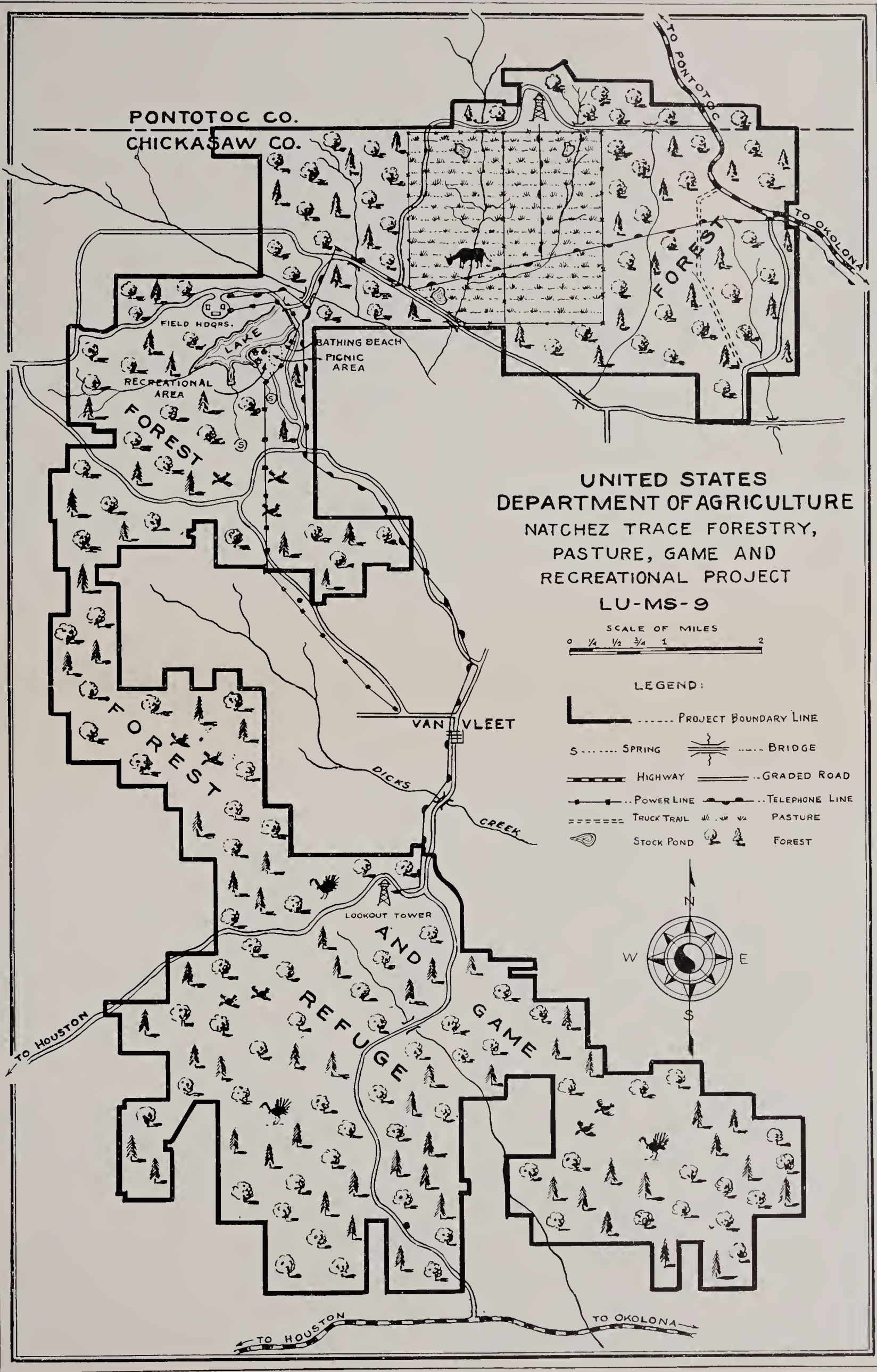
A primary aim in development of this project has been to make it fit a need in its particular environment. In the achievement of that aim, the fullest cooperation by local and State agencies, and by individuals, was sought and obtained. Eminent in this cooperation has been the University of Arkansas, which is situated at Fayetteville, 14 miles from the project. The University assisted generously in planning the project at its inception and in development of every phase as the work progressed. The Department of Agriculture, through a formal leasing agreement, plans to designate the university as the agency to administer the project for the further promotion of better land use in the State.

Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture

B. M. Gile,  
In Charge of Region.

C. B. Wiggans,  
Project Manager.





forest fires. To this end, two fire towers enable watchmen to discover quickly any possible fire that starts within the project area, and telephone lines help in the quick reporting and rapid suppression of such blazes.

Perhaps of greatest significance in the forest development, however, is the planting of young trees on land previously eroded or over-cultivated until it had been drained of fertility for crops. On 800 acres, which had been left without suitable seed trees, 800,000 trees have been set out. These promise, with careful cutting, a stable source of timber. They are expected to provide a demonstration of the value of forests both as a means of supplementing farm income and of safeguarding the soil.

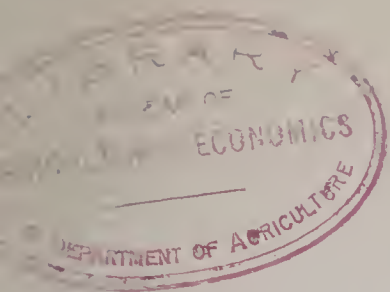
Another protection to the soil, which in the project area is susceptible to severe gully erosion, is provided in the pasture development. More than 10,000 acres have benefited from conservation work which includes terracing, proper drainage, and reseeded. Restoration of land to grass cover will in itself go far toward stopping this wastage of the soil. In addition, the 500-acre pasture development at the project demonstrates the value of such land for grazing use as a basis for diversified farming with greater emphasis on livestock. Farmers and others interested in agriculture are invited to inspect this development and to discuss the work with project representatives at Okolona.

Throughout the development of the project there has been active interest and cooperation on the part of local people. The project is intended as a contribution to the social and economic betterment of northeast Mississippi, and it is hoped citizens of the region will continue to promote and share in the work. It is planned to turn the project over to the Mississippi State Forestry Commission for permanent administration.

**Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture**

B. M. Gile,  
In charge of region.

N. C. Moncrief,  
Project Manager.



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# THE NORTHEAST MISSISSIPPI LAND USE PROJECT

for: FORESTRY  
RECREATION  
GRAZING  
WILDLIFE

A 23,000-Acre Demonstration in Better Land Use



**T**HROUGH PROVED METHODS OF BETTER LAND USE and as a contribution to the social and economic welfare of the people of this region and of Mississippi generally, the northeast Mississippi land use project is developing 90,000 acres of worn-out farm and timber lands into abundant pastures, productive forests, and wide recreation areas.

When the project was begun in 1934, the land either had been abandoned or was unable to furnish the families living on it with a satisfactory living. Its continued use for growing cotton and corn not only was binding the people to unrewarding, hopeless toil, but was accelerating waste of natural and economic resources.

In contrast, 3 years of constructive land use have provided the people of northeastern Mississippi and nearby territory with beautiful pleasure spots about the shores of four lakes embracing altogether 920 acres. A demonstration of the value of adequate, soundly managed pasturage is being conducted on acres now rich in grass, and experiments of significance to southern agriculture are under way with dairy and beef cattle. Along with this development has gone conservation of rapidly wasting soil by restoration of cropland to grass and forest cover. Woodlands have been improved and new forests have been planted. Wild game and birds are returning in numbers which increase every year.

### **An Avenue to Plenty**

What has been done here can be done elsewhere in the South. This is the larger purpose of the northeast Mississippi project. Started as part of a national campaign to promote better use of land resources, the immediate purpose of the project was to restore to wisely managed production land that no longer yielded returns from farming, and to help the families stranded on barren soil to move to better farms. The greater objective, however, is one of demonstration: To show the methods whereby millions of worn-out, discarded acres in the "Deep South" can be brought into uses that will meet the social and economic needs of the people who live there.

The northeast Mississippi project area was chosen for this demonstration because the problems it presented are common to wide areas in the South; a solution of these problems would offer an example to be followed elsewhere. Continuous cotton and corn plantings had drained the soil. Much of the woods had been burnt or had been skinned by excessive cutting. Fields were gulched and exhausted.

Despite the inability of the sterile acres to give them a living, 500 families were fighting a losing battle for subsistence when the project was inaugurated. Their average cash income was \$125 a year and 80 percent had been forced on the relief rolls. Many were tenants and sharecroppers, so insecure in their tenure as to have no incentive for saving or improving



The dairy husbandry building erected by the project for experimental work in better cattle and improved pastures

the soil. The woodlands no longer gave them an additional source of income, and the wildlife which once had contributed to their larders had fled or been killed off.

Many plantation homes, once a glory of the countryside, but now abandoned and a prey to time, mutely testify to the prosperity that preceded the present distress. They stand now as witnesses to the tragic consequence of waste and abuse of the land.

## For Better, Larger Herds

Of special importance in the detailed object lessons of the project is its pasture development. Several types of grass have been seeded on 4,000 acres formerly eroded raw from lack of cover and unconservative cultivation. In addition, 16,000 acres have been made available for continuing pasture development.

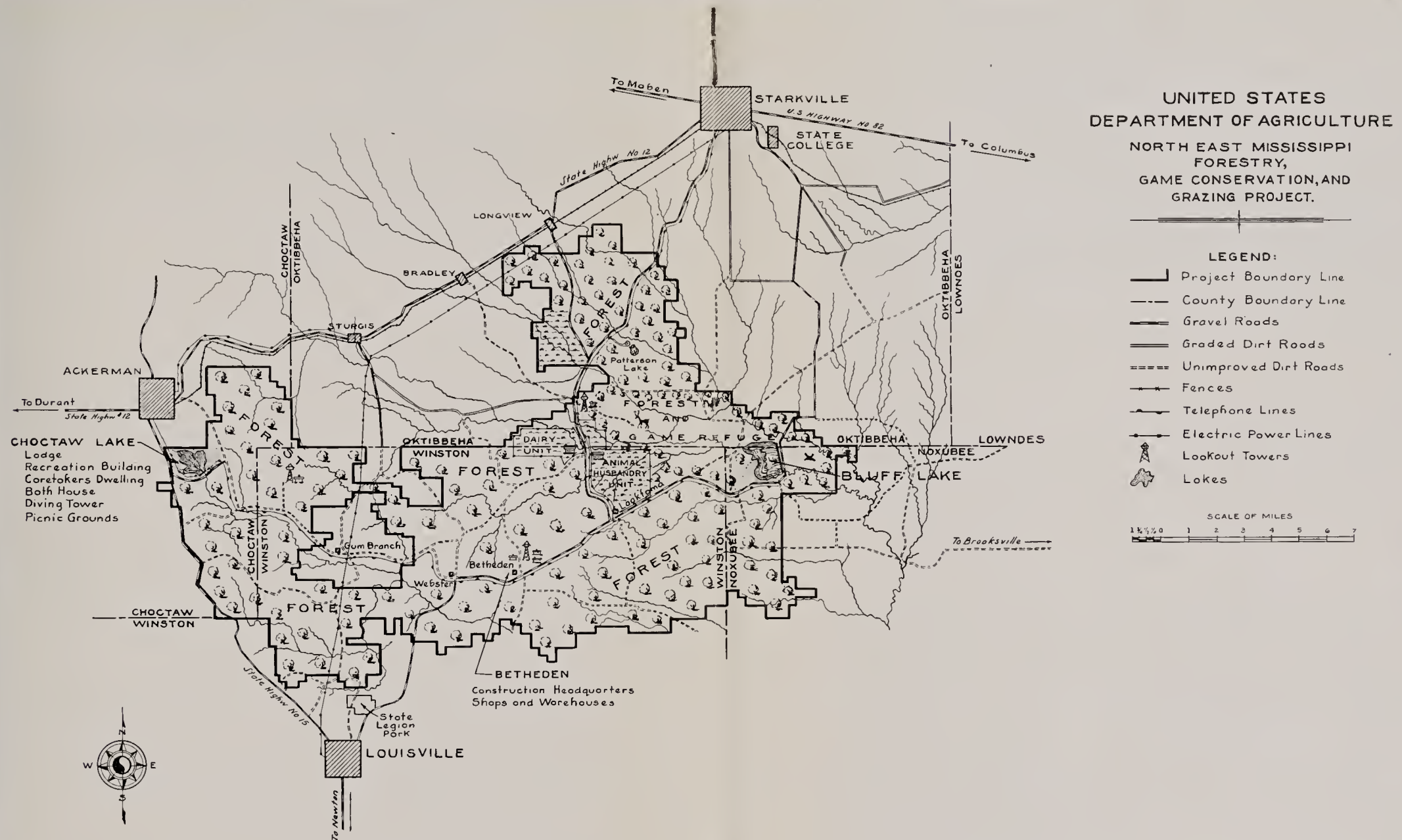
As a long-range demonstration, a dairy and animal husbandry unit is being developed. It seeks to develop strains and breeds of livestock specially adapted to the area, to determine most practicable means of improving forage, and to discover more economic methods of livestock management. Other objectives are to establish the right intensity of grazing, and to find ways in which carrying capacity of pastures can be increased and the grazing season lengthened.

Most southern farms are not adequately supplied with the grass that is needed both to stop erosion on sloping land and to afford pasturage as a basis for diversified farming. The project work in this field therefore may be regarded as of great importance to future southern agriculture. Farmers and others interested in the subject are invited to inspect the developments and to discuss the work with project representatives at Starkville.





## GENERAL DEVELOPMENT OF NORTHEAST MISSISSIPPI PROJECT



LU-MS-8

## Recreation

To a population extending over a wide area in northeast Mississippi and even in neighboring States, the project now offers outstanding recreational facilities that were previously lacking. Swimming, boating, fishing, picnicking, hiking, and camping are among the activities now afforded to visitors.

Most of the facilities center about the four lakes created in the development of the project. Choctaw Lake, in the western part of the area, covers 90 acres and the adjoining Cabin Lake covers 12 acres. In the eastern part of the project is the 800-acre Bluff Lake, formed by a dam 2.3 miles long. A shallow lake, for the most part, it is well suited to canoeing and pleasure boating. Patterson Lake, an 18-acre body of water, is in the north central part of the project, and has been set aside for the exclusive use of colored people.

The shores of Choctaw Lake have been extensively developed for play purposes. As its edge stand a lodge building, recreation building, bathhouse, picnic area and parking area. A bathing beach, diving platform, boat landing, and boat cove are also available to the public. At Bluff Lake two 850-foot wells have been sunk to provide drinking water, and picnic areas and a boat pier have been constructed. Similar development work on a small scale has been done at Patterson Lake.

To render the recreational facilities easily available, as well as to provide for fullest use of the rest of the project, 27 miles of highway and 5 miles of park road have been built. Like the other development on the project, this was accomplished with relief labor furnished by the Works Progress Administration.

## Forestry

The return of the formerly abundant woodlands to the area, a major phase of the project, not only is adding to the scenic beauty about the four lakes, but also is demonstrating that land no longer suitable for production of cotton or corn may still have an economic use in growing trees. The greatest part of the land within the project is devoted to scientific development of a forest that has great potential value.

On hundreds of acres dead or worthless trees have been removed. Development of trails and firebreaks has made control of fires relatively easy, and three fire towers from which such blazes may be quickly discovered have been constructed. As part of the extensive telephone system that has been installed, lines have been raised specifically to assist in fighting fire.

Most significant of the forest developments, however, has been the planting of 550,000 forest tree seedlings on land formerly fruitlessly tilled for crops. These plantings serve many purposes. They provide a future crop of value, stop destructive erosion, and aid in control of floods. The





A view of Choctaw Dam and Lake, with the spillway in the foreground, and the roadway and bridge which contribute to the recreational development

illustration offered by the project in careful husbandry of forest resources is of particular value to the South in its efforts to develop a supplemental source of farm income. It is showing that proper conservation practices can convert useless land into a valuable and productive forest.

## Wildlife

Decades ago the northeast Mississippi project area abounded in wild game and birds of many kinds. Destruction of feed crops, and lack of protection in the past caused a steady dwindling of all forms of wildlife. This destructive process has been reversed by the project. Both fish and game birds are now being brought back by the development and management of the purchased lands. Already there has been an increase in the population of all wildlife.

Planting of game food and cover crops has been carried on throughout the area. This, with adequate protection, has been largely responsible for the increase. Game food has been planted in 400 acres. The lakes and the increasing woodlands offer new, needed cover. Under good conservation conditions increased opportunities for hunting should be possible, not only within the project area, but on neighboring land which will benefit from the growing numbers of game.

Excellent fishing opportunities will be offered on the project lakes. In Choctaw and Cabin Lakes, 20,000 bass and 7,000 brim have been released, and Bluff Lake has been substantially stocked with the same fish.



## The Future of the Project

The project has been planned and developed with the closest cooperation from local and State people and officials. Future advice and participation in the project on the part of Mississippi people are urged. It is planned to turn part of the project over to Mississippi State College, which has worked closely with the project staff in the development, and part to the Bureau of Biological Survey.

Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture

B. M. Gile,  
In Charge of Region.

Clyde McCreight,  
Acting Project Manager.

NOTE.—Virtually the entire development of the northeast Mississippi project was under direction of E. R. Lloyd, who died March 22, 1938.



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# THE CENTRAL OREGON LAND UTILIZATION PROJECT

ary, U. S. Department of Agriculture,  
Washington, D. C.



*Canyon of the Deschutes River*

## THE PROBLEM

An area of 170,000 acres where aridity, erosion, and basic misuse were bankrupting wheat farmers year after year, draining the community's resources, impoverishing the land itself. . . . An area which had originally supported a dense growth of native grasses suitable for a fine range, severely damaged by attempted cultivation and wind erosion. . . . An area where the encroachment of crop farms and the impossibility of adequate range management had forced the remaining stockmen into serious over-grazing on the grass that was left. . . .

## THE ANSWER

A cooperative program by local people and the Government that is restoring land to good use by:

- putting submarginal farmlands back to grass,
- developing a common pasture under a locally organized grazing association,
- improving the capacity of the range, providing cover, feed, and range for wildlife,
- furnishing recreational facilities along the rivers.

## THE CENTRAL OREGON LAND UTILIZATION PROJECT

LAND UTILIZATION PROGRAM  
BUREAU OF AGRICULTURAL ECONOMICS

UNITED STATES DEPARTMENT OF AGRICULTURE

ANDREW M. CHRISTENSON, *Project Manager.*

HARRY G. ADE, *Acting in Charge of Region.*

Project Office, Madras, Oregon



## THE CENTRAL OREGON LAND UTILIZATION PROJECT

### THE AGENCY

The project, formerly under the Resettlement Administration, is now part of the United States Department of Agriculture's comprehensive program of land conservation and utilization, carried on by the Bureau of Agricultural Economics. Improvement of the project area for its new uses has been carried out in cooperation with the Works Progress Administration, which by March 1, 1938, had contributed some 2,415 man-months of employment.

### THE PEOPLE

Although the extreme dryness of parts of Jefferson County (where average rainfall for the last 25 years has been less than 8 inches) has driven many farmers off the land, at the time the project was begun, 50 families were still living within the area, most of them wresting a precarious livelihood from their farms, and many of them needing public assistance. In most instances those families which sold their holdings to the Federal Government have been aided financially or otherwise in finding new and better locations.

### THE PROJECT

Insufficient range has compelled local ranchers to run their stock onto the spring pastures before the grass is ready, and to hold them on it too late in the season for the forage plants to develop seed and to recover for use in the fall. This situation, aggravated by the effects of local topography and climate, steadily depleted the range. As a remedy, the project is developing a territory principally for spring and autumn grazing, and for transit use by thousands of head of livestock migrating each season to and from the summer range.

Development of the area for range has been based on a practical grazing management plan that takes into consideration both existing conditions and potential use. The work has concentrated on reseeding abandoned farmlands, developing springs and stock water reservoirs, constructing corrals, stock trails, and salt grounds, removing existing fences and old buildings, laying out secondary roads. In cooperation with the Bureau of Biological Survey, rodent control has begun over the entire project. Already, as a result of this work, available forage has noticeably increased in areas that were formerly infested.

*Sowing death for rodents—that the new grass may live*

(All photos by FSA)





## WILDLIFE . . .

The exploitation and depletion of this area in the past meant the destruction of cover and feed for game birds, and the curtailment of range for the mule deer and antelope that were once plentiful here. Now the project will make belated retribution to nature; and with the restoration of native grasses and shrubs, new nesting grounds and winter feed will be given the native birds. Expansion of the range will provide a greater territory of protected grazing for the bigger game.

## RECREATION . . .

Traversed by the Deschutes and Crooked Rivers, rich with geological phenomena and a haunt of thousands of fishermen, the Central Oregon Project is ideally situated for recreational use. In the picturesque Crooked River gorge, near the stream's junction with the Deschutes, the project's development staff has constructed a 10-acre camp and picnic ground, to which it has piped ample fresh spring water and installed drinking fountains and hydrants. Rustic fireplaces, benches, tables, and a children's playground, together with complete sanitary facilities, have been set up. A loop road through the grounds makes each camping unit readily accessible, while the lower terrace next to the river has been reserved exclusively for picnicking.

Both the Crooked and Deschutes Rivers are within easy access of fishermen. Foot trails follow both banks of the Crooked River, and a good road leads to the Deschutes River, only a mile and a half away from the campground. The recreation area has been developed for the public, and is open at all times without charge. Visitors are requested to cooperate by keeping the grounds clean and by preventing any destruction or defacement of the recreational facilities.

## THE FURTHER PURPOSE

Most of the 170,000 acres in the Central Oregon Project will be leased by the Government to a local cooperative grazing association composed of stockmen living in and near the area. The State Park Board is cooperating in the supervision of recreational features. The project will constitute a striking example of how the combined efforts of Federal, State, and local agencies can bring about a more productive and beneficial use of land.

The significance of the Central Oregon Project lies not only in what it will accomplish in its own immediate area, but in its



*Where the stock go down to water: a new trail cut into the hill by the project staff*

influence toward the better use of land in many other areas of dryland farming and grazing in this State where similar problems exist. Another land utilization project of the Bureau of Agricultural Economics, located in the coastal mountains of the State, demonstrates desirable land use changes that should be extended to many thousands of acres of sparsely settled lands that are better suited to forestry than they are to cultivation. It is the hope of the Department of Agriculture that the benefits illustrated by these projects can be introduced to larger areas with the cooperative assistance of local people and of the State.

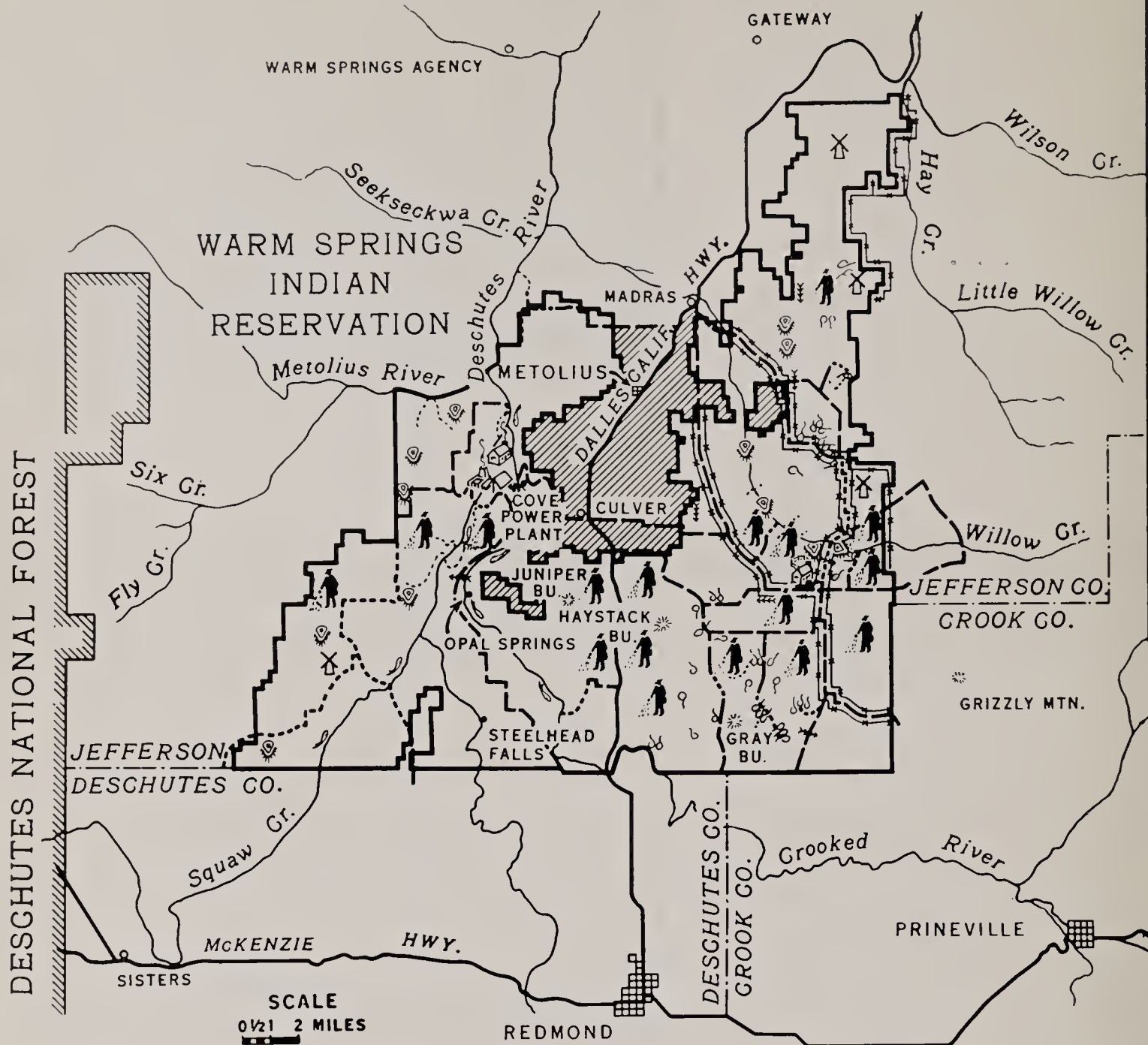
*A natural spring on the project being developed to support the extended livestock program*

## THE CENTRAL OREGON LAND UTILIZATION PROJECT





# CENTRAL OREGON LAND UTILIZATION PROJECT



- |                               |                                   |
|-------------------------------|-----------------------------------|
| — Project boundary            | →→→ Cattle guards                 |
| ▨ National Forest boundary    | ⊙ Corrals                         |
| - - - County boundary         | ~ Springs                         |
| — State highways              | - - - Truck trails                |
| - - - County roads            | ⋯ Stock trails                    |
| ▨ Excluded pending irrigation | ☼ Catch basins                    |
| 👤 Seeding                     | 🏕️ Public camp and picnic grounds |
| 🏠 Construction camp           | ⛶ Windmill                        |
| ✂ New fences                  | 🐟 Fish                            |

THE SHEYENNE RIVER LAND UTILIZATION

1938

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PROJECT JUL 29 1938  
U. S. Department of Agriculture

Where the 63,000-acre Sheyenne River Land Utilization Project now affords a managed, permanent range, and a playground for all southeastern North Dakota, the waters of a great inland sea, Lake Agassiz, once rose and fell under the sun of primeval days. Back of these contrasting pictures lies a story of Lake Agassiz's gradual withdrawal and disappearance, of the giant sand delta the Sheyenne River built in what is now Ransom and Richland Counties, of the patient work of nature in seeding and covering these sandy acres through thousands of years, and of the coming of man.

Back of it, too, lies a brief but all too tragic story of years of fruitless attempts to farm this sandy soil, of quick depletion of the pastures nature had slowly made. At the time the project was begun, 4 years ago, the area had become one in which there was widespread distress. Disastrous wind erosion and many other evils of maladjustment to the land existed in acute form.

Constructive land use, exemplified in the project, has changed this dismal picture into one of promise for the future, even in the comparatively brief time the project has been in operation. The productive range, under controlled grazing, will be a permanent source of income to local operators and is lending them invaluable aid in organizing to give the economy of their area a stable basis. Surrounding a lake and two swimming pools stands an extensive recreational development giving thousands of people a needed opportunity for enjoyment and relaxation. The timber stand on a part of the project area is being conserved, and wildlife, encouraged by the added water, feed, and cover, is returning.

When man first came to this land, he brought the restless energy and the tools that convert the wilds into habitations and fields. The first settlers came in 1865, but they soon learned the lesson that their successors were unwilling to accept until they had gone through many bitter experiences; that the soil would not support farming, that when it was ploughed it soon blew away because fundamentally it was still just the Sheyenne delta sand, with the slight organic layer that nature had built on top through many centuries. They found, too, that the grass could not be grazed too closely, or, again, the soil would blow from under them. But in later years, newcomers who were driven by the increasing pressure for land failed to heed the teachings of these experiences. Overgrazing and new vain efforts to raise crops followed.

Stripped of its protective grass cover, the soil began its restless drifting. In a few years man had destroyed much of nature's work of centuries. Many surrounding farms and pastures, otherwise good, were ruined by the moving sand dunes.





### Wise Grazing and the Future

But there is a brighter end to the story. These were the conditions the Sheyenne River Project was designed to cope with when it was begun in 1934. Its task was to change the use of the land from ways of destruction to those of construction. The most obvious result of its 3 years is its attractive recreation area. But the fundamental adjustment necessary to place this area of Ransom and Richland Counties upon a stable economic basis is the fostering of a permanent range. This is being accomplished through elimination of cash-crop farming where the soil is too sandy and is subject to erosion, by adjustment in size of operating units, by provision of needed water facilities, and finally by organization and control of the grazing by local operators.

Acres that had been ploughed, thereby exposing the sandy soil to the wind, are being reseeded - 860 acres have been thus planted - and every encouragement is being given to residents to shift from the fruitless attempt to cultivate this land into the raising of livestock. Closely linked to this encouragement has been the attempt to enable local operators to enlarge their units to a size that will give them a reasonable prospect of earning a living. Many ranchers were trying to raise stock without sufficient acreage. This not only had grave results for them, but it added to the erosion problem because of over-grazing.

Of the 63,000 acres of land bought for the project, the major part is being converted into range that will help to solve this problem. The purchases make available to the operators additional acreage for grazing. Wise management of these pastures will add to their carrying capacity and palatability in years to come.

In furtherance of the range program, much development work has been done, chiefly designed to make adequate water available. This also assists both in increasing income and, through helping to distribute the cattle properly, in halting over-grazing and erosion. In this work, 57 wells, 53 windmills, and 64 stock water tanks have been constructed. Other development work has included the removal of 150 miles of old fence and the erection of 260 miles of new fence. All of these developmental features, as well as those involved in other phases of the project, were built with the cooperation of the Works Progress Administration..

### Recreation for All

The recreation area covers 2,000 acres. The heart of this development is the large recreational building, constructed of logs cut and hewn on the project. Useful for numerous purposes, it includes a large auditorium and a stage, together with 2 dressing rooms and a refreshment booth. For overnight the week-end visitors 5 overnight cabins have been built. Facilities for campers and hikers are extensive. These include several picnic areas, with fire-





places and tables, and numerous trails and roads. Provision has been made for swimming and boating in a 12-acre lake formed by diverting the flow of a creek, and in 2 swimming pools made by damming other creeks. One of these pools is an acre in extent, the other three acres.

The value of these recreational facilities is greatly expanded by their location, for they form the only such play spot in an area of many score miles. Adaptation of the area to recreational use has carried with it the conservation of a beautiful natural timber stand in a small portion of the project area. The trees in the park area of the project are a large contribution to its beauty and usefulness. Similarly, the recreational development has contributed to the protection of wildlife--deer, raccoon, beaver, and upland game fowl--that inhabit this section of the project territory.

### The Example of the Project

As part of its work in putting 63,000 acres of land into constructive use, the project has stimulated the organization of local operators into a cooperative group for the protection of the range through use of community pastures, the stabilization of the economy of their area, pooling of resources for purchase of pure-bred sires to improve their herds, and the assurance of adequate income. Such control of the land for the best interests of all will not only result in added security for local people but will spread the beneficial effects of the project far beyond the project borders. It is planned to turn a part of the pasture area over to the North Dakota Agricultural College for experimental work.

The project also provides a demonstration of what can be accomplished elsewhere in the conversion of destructive into constructive use of land. Methods to be followed vary with the character of the problem in each area, but the changes wrought in this distressed section can be effected in others by putting the land into the employment for which it is adapted. Through sympathetic cooperation of local, State, and Federal agencies, such changes can be accomplished. This project is part of a nation-wide campaign to promote better use of America's land resources, and through such cooperation that campaign can be made widely effective.

### LAND UTILIZATION PROGRAM BUREAU OF AGRICULTURAL ECONOMICS UNITED STATES DEPARTMENT OF AGRICULTURE

Rex E. Willard  
Regional Director

H. R. Danielson  
Project Manager

1. The first part of the report deals with the general situation of the country and the progress of the work done during the year.

2. The second part of the report deals with the results of the work done during the year and the progress of the work done during the year.

### THE RESULTS OF THE WORK DONE DURING THE YEAR

3. The first part of this section deals with the results of the work done during the year and the progress of the work done during the year.

4. The second part of this section deals with the results of the work done during the year and the progress of the work done during the year.

THE RESULTS OF THE WORK DONE DURING THE YEAR



# *The DIXON SPRINGS Land Utilization Project*

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★ OCT 8 1938 ★  
CENTRAL STATES  
U. S. Department of Agriculture

COMPRISING 10,000 acres of rolling land characteristic of millions of acres in the Central States, the Dixon Springs Land Utilization Project in northwestern Pope County, Ill., has been established by the Bureau of Agricultural Economics as part of its Nation-wide program to demonstrate how land resources may be used more successfully. The Dixon Springs project is primarily experimental: In an area where ordinary methods of farming have proved incapable of supporting families without depleting the land, this project is working out the answers to the basic question, "Can this rough, eroded land be used to produce an income and yet prevent further destruction of soil fertility?"

Cooperating with the Bureau of Agricultural Economics are several other agencies, including the Forest Service, the Soil Conservation Service, and the University of Illinois. The efforts of these agencies, focused on this small area, are of vital significance to farmers and land owners throughout a large part of the Central States. For similar problems prevail in an area comprising some 15,000,000 acres in Illinois, Missouri, Indiana, Kentucky, and other States. Today farmers are struggling in vain to earn a living from this land even though it will not produce good crops and the land itself is being wasted in the process. At Dixon Springs a concerted effort is being made to work out the methods of using the land that will help construct a stable basis for rural communities.

Several questions of land use must be answered: What types of agriculture may be practiced on this land with profit and without further loss of soil? What are the relative values of forestry and grazing

as uses of the land, and as methods of conserving water and soil? What size farm units are required under a forestry or grazing economy? What is the effect of soil treatment on loss of soil and water from pasture lands? How can careful management improve pastures and stock raising? How does the slope of the land affect its desirable use? Crop rotations, use of manure, effectiveness of terracing and contouring, and the relative values of different grasses are other subjects to be explored.

## *The Background of History*

Settled partly in the late eighteenth century, the Central Mississippi Basin became the home of converging streams of population from Virginia, the Carolinas, Tennessee, and Kentucky. The people were largely of the Irish, English, and German stock that struck out sturdily for newer and better lands as the older seaboard States became too crowded to afford them opportunity. They patterned their agriculture after that of the States they had left. When the timber was cleared, corn, wheat, and hay were seeded and harvested—primarily as feed for the livestock, their chief source of cash income. Settlement pushed back from the river uplands as roads were extended, and by 1820 products of this section were a considerable factor in American farm trade.

By this time, however, the rich Corn Belt lands to the north were becoming available. In the resultant rush to obtain them, the uplands' development was arrested abruptly, to remain so until the latter part of the last century. It was at this time that an extensive shift from livestock growing to

ADMINISTRATION BUILDING.—Built by relief labor from native materials





grain farming took place. More and more land was brought under cultivation. Farms were broken into ever smaller units. Tillage too intensive for most of the soil types of the area produced erosion; in addition, many portions of the area were robbed of their organic content by continuous cultivation. As revenues declined, it became increasingly difficult for farmers to rotate crops or follow other approved soil conserving practices.

By 1900 much of this section yielded income enough only for operating costs, and in the collapse of agricultural prices following the World War, mortgage foreclosures, tax delinquency, and farm abandonment became widespread. At the time the project was established, in 1934, the people of the area were still grimly fighting a losing battle against economic forces too great for them to oppose.

### *The Return to Livestock*

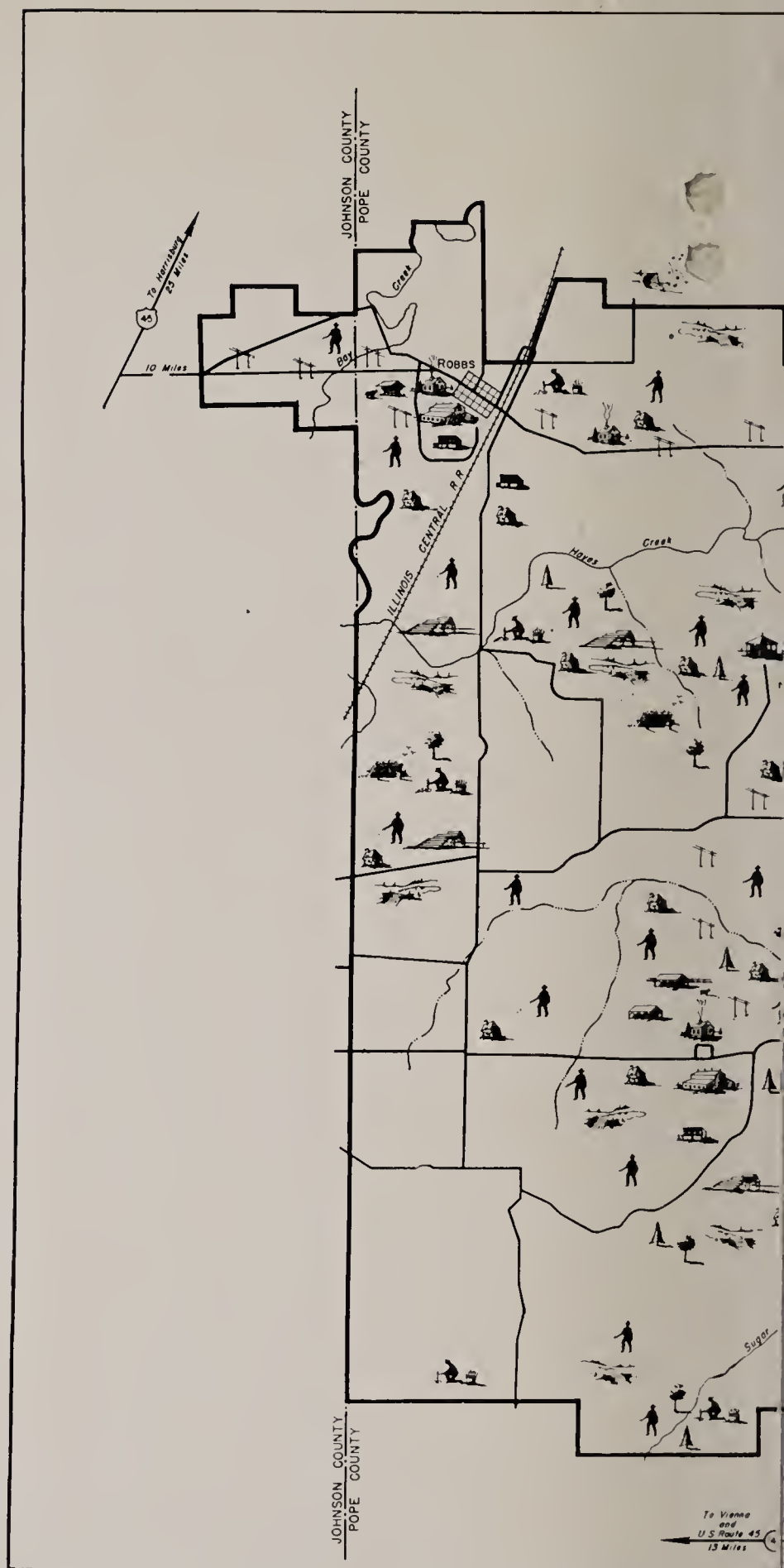
Since much of the soil of the rolling uplands of which the project area is characteristic is so depleted in fertility, so eroded, or so low in organic content as to make intensive cultivation unprofitable, it is clear that the first step in getting such areas on a sound economic basis is to develop them for other uses, prominent among which is livestock production.

In all, some 6,500 acres on the project are included in the pasture research and demonstration areas. Aside from making available research areas for scientific experimentation, the project staff has proceeded with the development of the other pasture areas on the basis of existing knowledge. Lime is used as a basic treatment in this program. Nearly 5,000 acres have been seeded, some sodding has been done, 4,405 acres of soil have been prepared, and pasture culture work done on 1,160 acres. Various systems of grazing and management are being practiced on these demonstration areas in close cooperation with the University of Illinois, which has placed a herd of 177 cattle and 527 sheep in the area.

In order to make effective the management program, 70 miles of barbed and woven wire fence have been built.

A considerable amount of construction has been necessary in the development of the livestock phase of the project. A cattle headquarters unit and a sheep headquarters unit have been installed; the former including a caretaker's house, large barn, and two cattle shelters; and the latter a caretaker's house, barn, sheep-shearing shed with concrete dipping vat, and six sheep shelters. Other barns, trench silos, shelters, and similar needed structures have been built where they are of most use.

In order to determine the most satisfactory means of restoring such areas as this to their most produc-



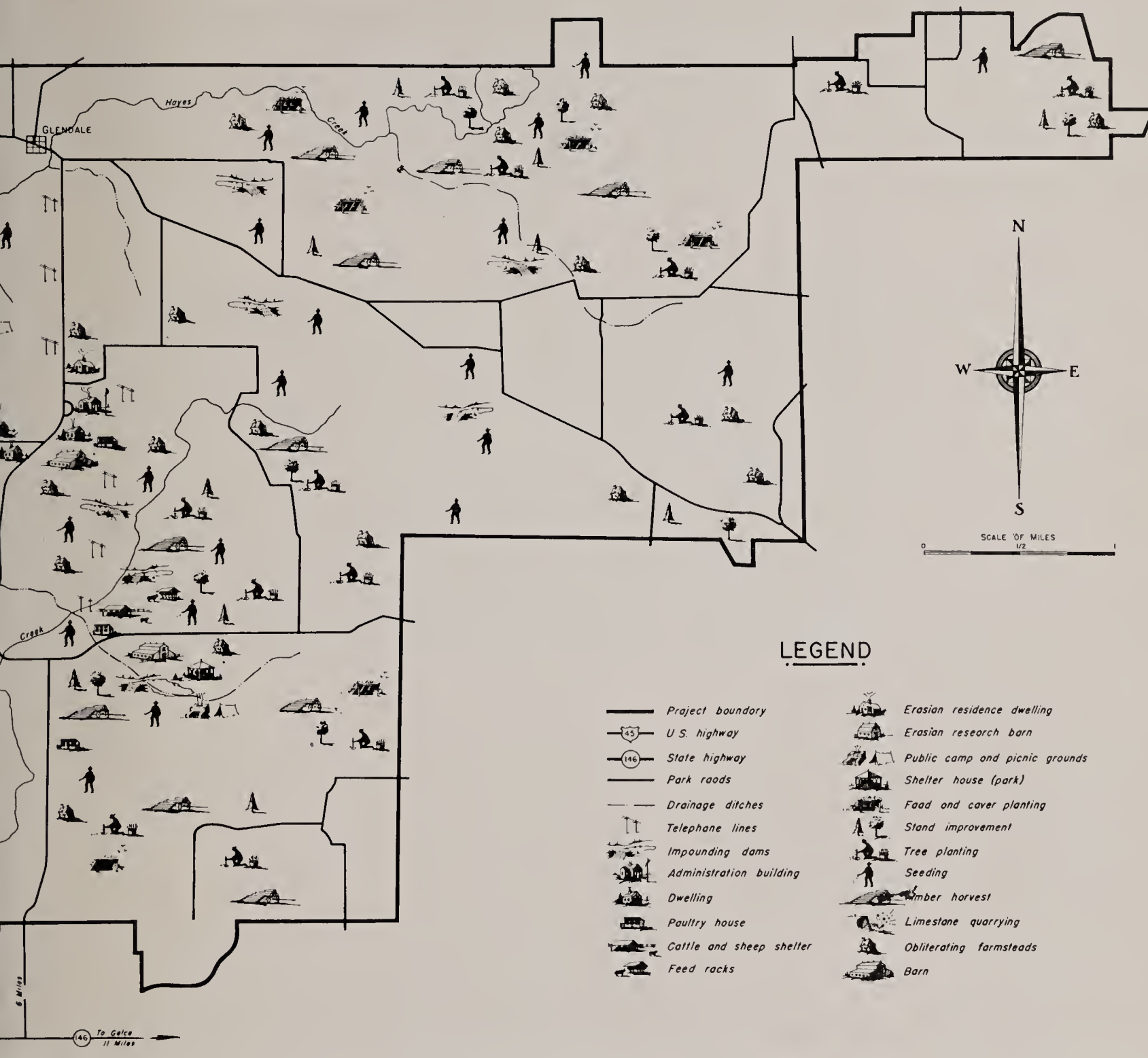
tive uses, numerous investigations are now under way, conducted by the Soil Conservation Service on an area set aside on the project for that purpose. One series of these studies is searching into the effect of various types of soil treatment and grazing-management practices in restoring grass cover and preventing loss of soil and water. Another experiment of wide significance throughout the Central States

# DIXON SPRINGS PROJECT

LU-IL-38-3

ROBBS (SIMPSON), ILLINOIS

BUREAU OF AGRICULTURAL ECONOMICS  
UNITED STATES DEPARTMENT  
OF  
AGRICULTURE



## LEGEND

- |                          |                                |
|--------------------------|--------------------------------|
| Project boundary         | Erasian residence dwelling     |
| U.S. highway             | Erasian research barn          |
| State highway            | Public camp and picnic grounds |
| Park roads               | Shelter house (park)           |
| Drainage ditches         | Food and cover planting        |
| Telephone lines          | Stand improvement              |
| Impounding dams          | Tree planting                  |
| Administration building  | Seeding                        |
| Dwelling                 | Timber harvest                 |
| Poultry house            | Limestone quarrying            |
| Cattle and sheep shelter | Obliterating farmsteads        |
| Feed racks               | Barn                           |

is that aimed at finding out how much and how fast water and soil are lost in rains on slopes of different grades. Three experimental areas are being devoted to still another investigation of the adaptability, yield, and response to treatment of various plants in restoring cover to depleted lands. Little research information is available on soil problems of this type of land in use as pasture. Since much of the land

will support no other agriculture, these and contemplated investigations are of great interest.

## *Saving and Using the Water*

Indispensable in proper management of livestock is water. The project staff has put special emphasis, in its construction activity, upon this phase. Five impounding dams have been built. The lakes they





**SHEEP HEADQUARTERS.**—The barn is in the foreground, with sheep shelters along road in background

impound average  $1\frac{1}{2}$  acres, and contain an average of 2,000,000 gallons of water. A 2-inch pipe under each dam permits its being drained off into a stock-water tank below. These dams also serve to conserve water resources of the area, to minimize floods, and to encourage wildlife. Similarly, the 100 check dams operate to conserve water and reduce flood danger, as well as to control erosion.

The major water conservation aspect of the project, however, is the 975-foot dam impounding an 85-acre lake. This dam is 35 feet high and contains 45,000 cubic yards of earth. A concrete spillway in the central part of the dam will accommodate 1,510 second-feet of run-off, the maximum run-off of the lake's 1,400-acre drainage basin.

Although the primary purposes of the project are to experiment in the development of pastures and forests, opportunities have been taken to make the area useful to local people. Two recreational areas are being developed, where shelter houses, open-air stoves, picnic tables and benches, hiking trails, and other facilities are being installed. Small food and cover plots to assist in preservation of wildlife also have been planted.

### *Forests for Better Use of Land*

Unregulated cutting has reduced the once magnificent 15,000,000-acre hardwood forests in Illinois to about 3,000,000 acres. To help reverse this wasteful trend and to promote the use of this land for forestry, extensive work has been done on the project to improve the existing timber stand and to build a new forest. About 1,500,000 trees have been

planted on bare and eroded slopes and fields. Among the trees planted are pitch pine, short-leaf pine, white and red oak, white and green ash, red gum, tulip poplar, black locust, and black walnut. In all, 1,578 acres have been seeded or planted. Timber stand improvement work has been done on 2,234 acres. This has included removal of certain trees and encouragement of others, brush clearance, and so forth. To protect both old and new trees from fire several miles of truck trails, roads, and lanes have been built; a telephone system has been installed; and a concrete bridge constructed below the large dam.

### *Administration*

To house and afford working quarters for the future administrators of various phases of the project, a large amount of construction work was necessary. Prominent among these structures is the administration building, a 37- by 128-foot structure built of native sandstone quarried on the area. Six dwellings have been built for workers who are to be placed in charge of experiments for the University of Illinois. Several of the best houses on the purchased area have been modernized. All of this work, as well as construction previously outlined, was done with relief labor furnished by the Works Progress Administration.

It is planned to turn the project over for future administration to the Forest Service, that agency in turn to issue use permits to the University of Illinois and the Soil Conservation Service for those portions on which they will carry out their work.

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Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture

L. E. Sawyer, *Regional Director*  
John R. Clifton, *Project Manager*



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U. S. Department of Agriculture

# SOUTHEASTERN IDAHO LAND UTILIZATION PROJECT



A WELL-IMPROVED RANGE of 386,000 acres is being developed from submarginal farm lands and small overgrazed ranch units in Oneida and Cassia Counties, Idaho, through the cooperative action of local people and the United States Department of Agriculture.

In 1935 the people of this area faced a grave problem of depleted land and resultant shortage of crops and livestock feed. Settling of homesteads had cut up the original grazing areas and many remaining parts of the range had been badly overgrazed. Low rainfall conditions and continued dry-farming practices in the cultivated areas had decreased production and led to serious soil erosion. Many wheat farms had been abandoned and remaining farmers faced bankruptcy because of decreasing yields and crop failures. Declining land values, tax delinquency, and greater relief loads were increasing the tax burden on the remaining farm lands in the counties.

To prevent the further deterioration of resources, the impoverishment of farm families, bankruptcy of the county governments and the wasting of human efforts in attempts to use the land agriculturally, the farmers, stockmen, and other residents of the area requested the cooperation of the



Federal Government in restoring the lands to grazing use. Together, the local people and the Government have set out to—

*return submarginal farmlands to grass cover;*  
*develop common grazing areas for the use of local stockmen;*  
*improve the capacity of the range and increase its stock-watering facilities;*  
*provide new cover, feed, and range for wildlife.*

To achieve these desirable ends, the community welcomed the South-eastern Idaho Land Utilization Project, formerly under the Resettlement Administration and now carried on as a part of the United States Department of Agriculture's national program of land conservation and utilization, directed by the Bureau of Agricultural Economics. Collaborating with the Department in the work of improving the project area to meet its new uses has been the Works Progress Administration, which by April 1, 1938, had contributed, 2,692 man-months of employment.

## What The Project Is Doing

### FOR THE PEOPLE

Although because of erosion and aridity many farms had been abandoned and had reverted to the county through tax foreclosure, 90 families were still living within the area when the project was begun. Few of them received more than a gross annual income of \$575 to meet all expenses and support families averaging six persons each. With the coming of the project, however, most of those families which sold their tracts to the Federal Government have been helped, through loans or advice or both, to find their way to new and more economic locations.

Development of the land for range use is making better grazing available to the stockmen who remain in the area, as the basis for a sound local economy. Rearrangement of the pattern of settlement in accordance with the new use of the land is also expected to make possible considerable savings to local government, for certain public services will no longer be needed.

### FOR THE LAND

Conservation of soil, grass, and water for a permanent productive range is made possible by the project. Competitive grazing, which has denuded great expanses of excellent range, is now giving way to conservation through cooperation of the local stockmen with the Federal Government. By arrangement with the Department of the Interior, stockmen will lease the available range—both public domain and purchased lands—in the project. The number of livestock will be kept within the present carrying capacity of the range and increased until the permanent maximum capacity is reached through controlled grazing and range-improvement work. Rights will be allotted on the basis of the stockman's dependency, commensurability, and priority.

To make this shift from crop farming to grazing possible, much range-improvement work in the project area has been done. Additional water

for livestock has been provided by the development of springs, wells, and catch basins. Fields formerly cultivated have now been reseeded to native and crested wheat grasses. New boundary and drift fences have been built, and useless farm buildings and fences have been obliterated. Truck trails have been constructed to facilitate maintenance, protection, and administration of the area.

In cooperation with the Bureau of Biological Survey, a thoroughgoing campaign to eliminate rodents has begun over the whole project territory. How important this is may be seen from the fact that these pests—kangaroo rats, field mice, squirrels, and rabbits—have consumed fully as much forage here as have the stock. In the winter, poisoned alfalfa is placed in pens to destroy the rabbits, and poisoned grain is scattered for the other rodents in the spring.

Coincident with general development, two nesting grounds have been established for the once-abundant native game birds, particularly sage hens and prairie chickens. The nesting areas have been fenced off from all grazing to permit return to their primitive stage and to provide needed wildlife feed and shelter. Too, the restoration of forage cover to all parts of the project will notably improve fall and winter range for hundreds of the native mule deer.

## The Long View

The 386,000 acres of the Southeastern Idaho project will be used as a common range by stockmen in and near the area who have first established priority and commensurability rights. Broadly considered, the project affords a noteworthy instance of what cooperation of Federal, State, and local agencies can accomplish in securing the productive and efficient use of the land. For if the present comprehensive plans for range improvement, conservation, and managed grazing are continued, the range may well be restored to its maximum carrying capacity, and the counties receive a substantial return in their share of the grazing revenues.

The significance of this project lies not merely within, but also without, its own boundaries. The problems it is engaged in solving are common to many other areas of dry-land farming and grazing in this State and adjoining areas. The Southeastern Idaho project, by providing a sound answer to these problems, will help farmers, stockmen, and rural communities throughout this region to work toward a more rewarding use of the land on which their livelihood depends. This is the aim and the hope of the Department of Agriculture in its land-utilization program.

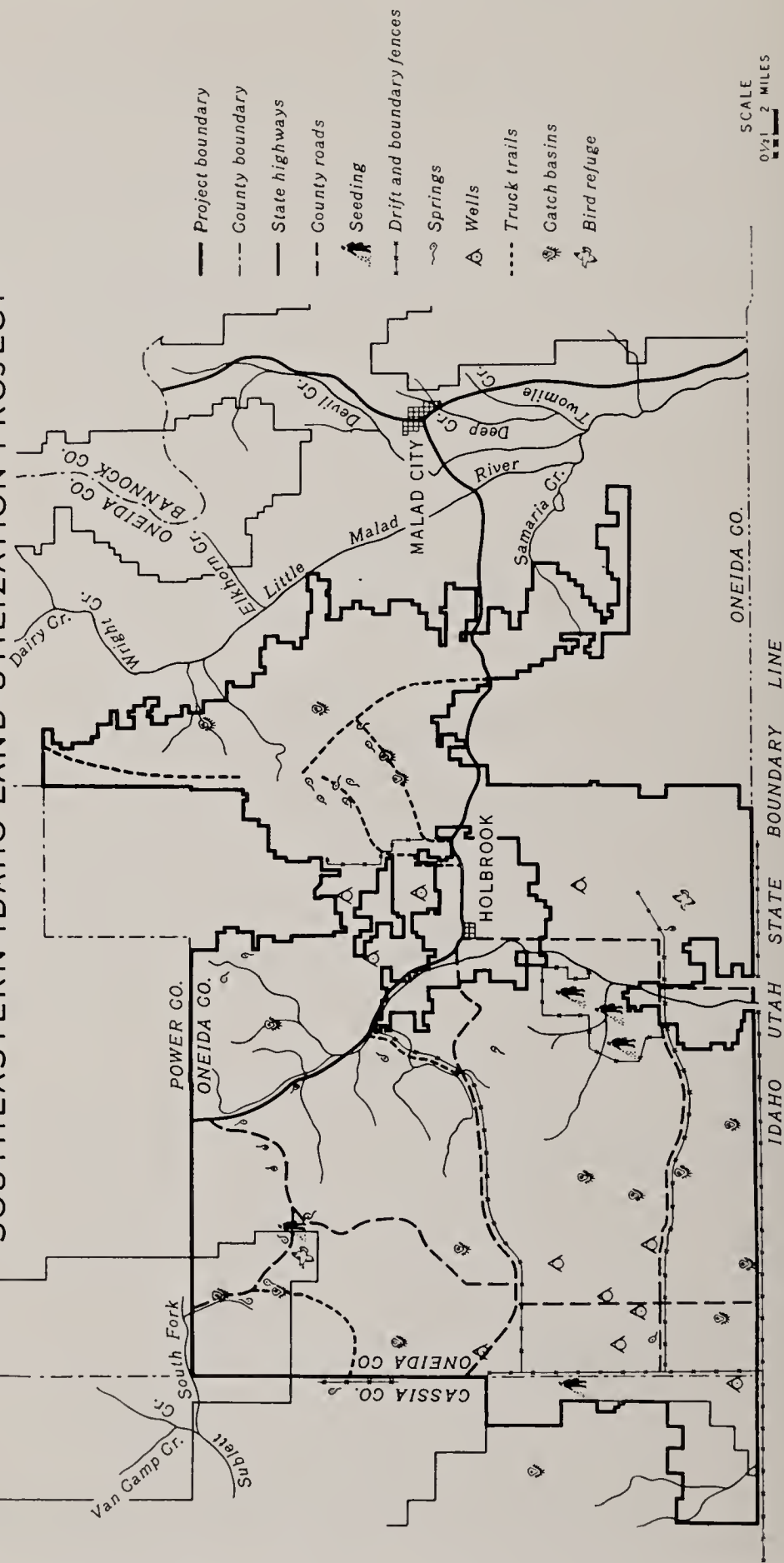
**Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture**

**Harry G. Ade**  
Acting in Charge of Region

**Ray Best, Project Manager**  
Malad, Idaho



# SOUTHEASTERN IDAHO LAND UTILIZATION PROJECT

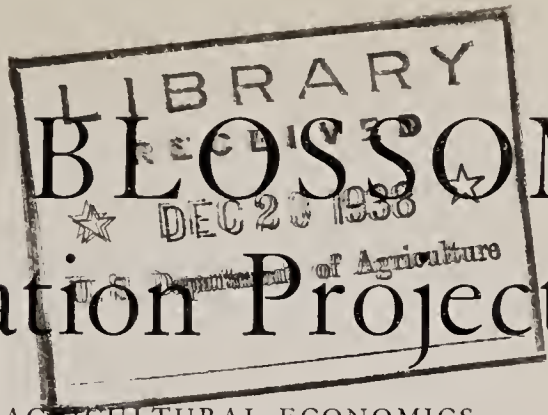


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# The BEAN BLOSSOM Land Utilization Project



UNITED STATES BUREAU OF AGRICULTURAL ECONOMICS



82 A ROAD TO BETTER LAND USE



Land Utilization Program  
Bureau of Agricultural Economics  
United States Department of Agriculture

L. E. Sawyer, Regional Director  
Walter N. Boyer, Project Manager

NOTE ON COVER ILLUSTRATION.—This is typical of the truck trails that now form a network throughout the project area. They have been constructed both to assist in fighting the forest fires that have taken heavy toll previously, and to make the recreational facilities of the project more easily available. The road and bridge shown here have been built on the east shore of Yellow-Wood Lake.

## REBUILDING INDIANA'S LAND

**I**N THE HEART of a southern Indiana country, rich in natural beauty, the Bean Blossom land utilization project is demonstrating on 20,000 acres that are not primarily suited for farming, the foundation of a better rural economy based on sound use of land resources.

At the time the project was initiated, over-cutting of timber had seriously impaired this great, potentially permanent source of income. Wildlife was rapidly diminishing. Farming, limited mostly to small hill patches, was proving inadequate to yield a satisfactory living because the soil was not suited to cultivation. Yet the great value of the area as a playground, as a stimulating scenic spot, and for forests, had been attested by the work of a colony of artists who gained a national reputation and by the presence of a 16,000-acre State park and game preserve.

To demonstrate the great potential values of this area, the Bureau of Agricultural Economics of the United States Department of Agriculture has converted the land to those uses for which it is naturally best adapted—recreation, wildlife conservation, and forestry. The farming of the infertile acres has come to an end.

Three years of constructive use have gone far toward taking advantage of the great natural possibilities here. An extensive forest, potential source of permanent wealth, has been improved and enlarged. Beautiful 147-acre Yellow-Wood Lake and its shores provide a popular recreation resort. And sportsmen of all varieties are finding new delights as the nearly extinct wildlife returns under the conservative methods now employed to encourage them.

### An Example for Others

The Bean Blossom project is a part of a Nation-wide land utilization program, under supervision of the Bureau of Agricultural Economics, to promote the constructive use of land. The immediate objective of the project was to take out of unprofitable use 20,000 acres of land that could never yield an adequate return if devoted to agriculture, and to show the State and local communities how the land could be used for economically more desirable purposes.

But another aim was to provide a model, to illustrate for other similar areas what productive use can be made of land that, if devoted to the wrong employment, yields little but distress. The lesson of the Bean Blossom project is plain. What has been done on these formerly idle or misused acres can be done on other like areas.

A few years ago, before the inception of the project, most of the tillable soil, fertile when first cleared, had already deteriorated and proved itself unadapted to permanent use for farming. Only a small amount of saw and cross-tie timber remained of a once magnificent forest. Game had fled.

This condition of the land was reflected in the lives of many of the people and in social and economic costs to the community. Relief costs were disproportionately high and many families not on relief rolls were in need of help of one





Year-old jackpine plantings. These seedlings were set out in the spring of 1937. Placed in a rapidly eroding field, they are designed both to assist in holding the soil and to afford a wood supply that will be permanent if trees are cut on a sustained-yield basis

kind or another. Support of schools in the area now in this project was a heavy burden, in many cases far out of proportion to the low tax income from the land. There was widespread tax delinquency. Return of families to poor farms during depression years and absence of any means of outside employment had added to the problem. Some 180 families were struggling vainly to earn a living amid these conditions.

And for the Nation as a whole, grave dangers were symbolized in this condition, for the erosion that was sapping these acres also was contributing to the disastrous floods of the Ohio and Mississippi Rivers, with their heavy human and monetary costs.

In meeting these problems, the project was initiated not only to stop erosion, not only to replant the forests. The Bureau has studied the problem as a whole, and worked out a plan of land use that will solve as many of these interrelated problems as possible. Therefore, the land has been developed for several different uses—particularly recreation, forestry, and wildlife conservation. The land utilization activities have also begun to attack the problems of tax delinquency and local governmental income which have plagued county officials throughout the southern Indiana area.

## A Base To Build On

Fundamental in the change to a prospect for a stable future has been the return of most of these acres to forest. For the land will not support permanently other growth, and trees are basic needs here in restoring wildlife, halting erosion,

providing natural beauty for recreation sites, and affording stable income. Two million trees have been planted on eroded hillsides and abandoned farmland. In time, and with wise management, these will yield a permanent income. Fire-protection work has been done on thousands of acres, and other acres have been treated to conserve existing stands of timber. Many miles of road have been repaired and others built to give easy access in event of fire. These measures will bring an increasing return through the years.

### For the Average Family

The natural beauty of this county has become proverbial. It has long attracted throngs of visitors and many artists. Under the guidance of the land utilization program, and with the active cooperation of the State conservation department, it has now developed recreation facilities that make it an ideal pleasure spot for families of moderate means. A dam 900 feet long and 35 feet high has impounded Yellow-Wood Lake, a new source of beauty and a new instrument of pleasure. The dam is across the valley of Jackson Creek a mile and a half north of State Highway 46.

For camping and picnicking the families will find ample means. A shelter house has been constructed in a large picnic area, and outdoor ovens and furnaces, tables, seats, a cistern, and other facilities have been installed. A good road reaches the lake and the picnic grounds.



At the time the project was begun the attempt to farm land that could not yield an adequate return had reduced some farm families to the circumstances indicated by such dwellings as this. Through no fault of their own many farmers throughout the United States have suffered similarly. Their difficulties are traceable in many instances to the effort to use the land for purposes to which it is not suited. It is the aim of the land utilization program of the Bureau of Agricultural Economics to put such land to the uses for which it is adapted



## The Sportman's Interests

They say that the Ten O'Clock Indian boundary line, which runs through Brown County, was given its name because the line was determined by the way a man's shadow fell when he stood on a certain spot at 10 o'clock in the morning. That boundary runs through Brown County, and when the treaty was signed in 1809 with the Indians the county was rich in numerous kinds of wildlife.

The Bean Blossom project is bringing back the game and the birds and the fish that had fled since then. In this work, the forestry and recreational phases of the project are integrated. Prevention of fire in the forests not only will save timber but will preserve cover and feed for wild things, while Yellow-Wood Lake will attract birds as well as humans.

In the encouragement of wildlife, 100 plots scattered over the entire project and averaging more than 5 acres to a plot, have been planted to food for game and birds. Game shelters affording protection over an extensive territory have been constructed, and the numerous water holes that have been built will provide an adequate water supply in all parts of the area.

The project has been designed to permit much of the area to return to nature, affected only by the measures outlined. The greater part of the land will become a forest where hunting will be so controlled as to protect the game.



Illustrative of the results of wise use of land resources is the shelter house built by the Bean Blossom project staff. Located in the large picnic area of the project, the shelterhouse was built largely of native materials. Affording needed work to Works Progress Administration workmen, its construction utilized both human and natural resources. The shelterhouse symbolizes the change from wasteful to constructive use of land, for the area in which it stands was not adapted to successful farming yet was highly suitable for the recreational development that is part of the project. As a result of this changed land use, profitless waste of soil and timber was replaced by the work that built this shelterhouse, a structure that will benefit thousands for many years



Yellow-Wood Lake, looking north from the dam. The lake has a surface area of 147 acres. It was impounded by an earth-fill dam 855 feet long across its top and 35½ feet high. The dam is 193 feet wide at the base and 16 feet wide at the top, and 105,000 cubic yards of earth were used in building it. The spillway, at the east end of the dam, is 470 feet long. The dam and lake demonstrate the multiple uses of the project's developments, for they aid in preserving wildlife, affording recreation, conserving water, and controlling floods

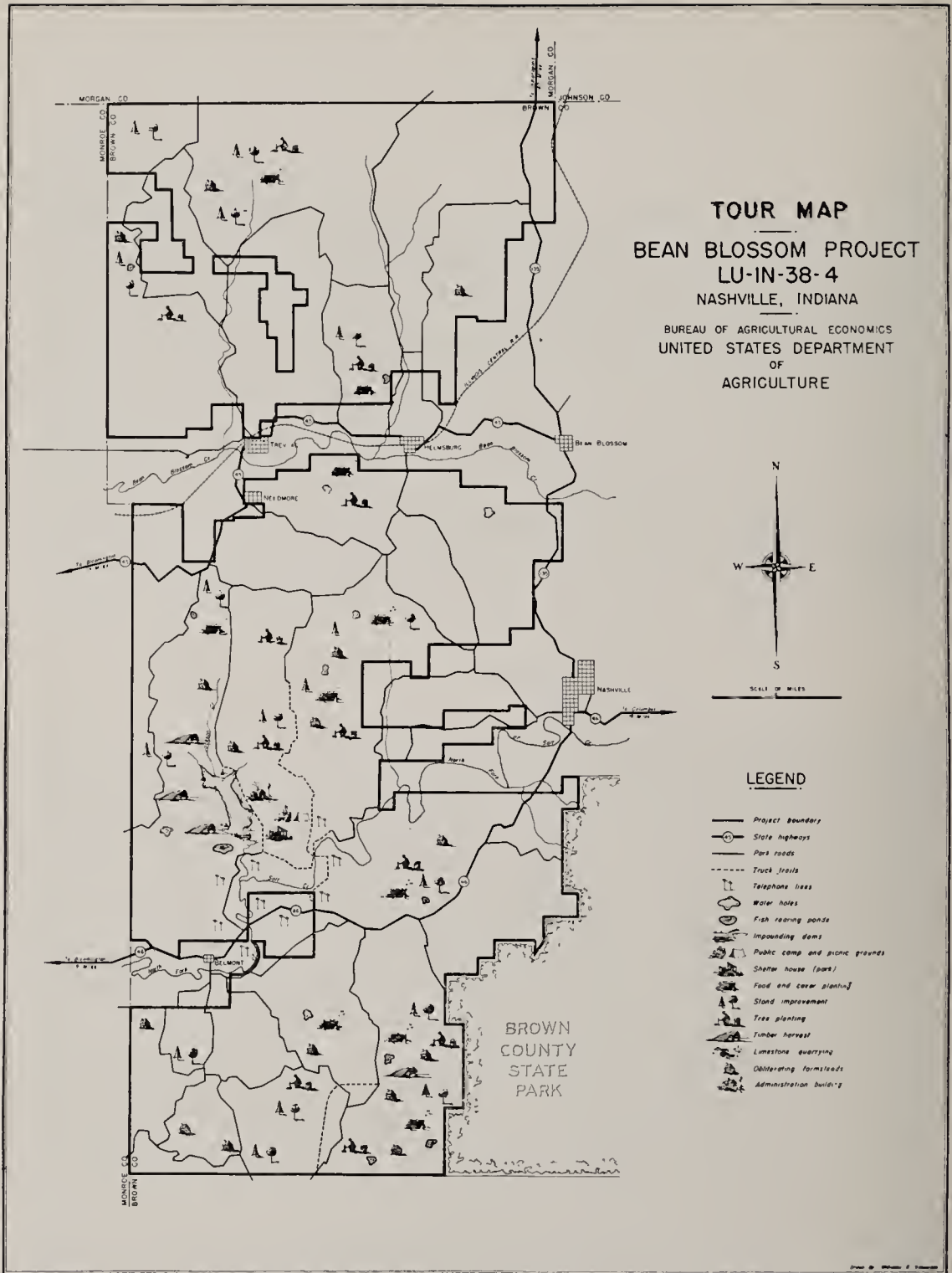
If in some ways the hunting to be enjoyed on the project resembles the hunting that the first settlers enjoyed, the fishing may be said to be even superior. Yellow-Wood Lake is the center of the development that is designed to please the devotees of Izaak Walton. About 500 parent fish, including bluegills, largemouth bass, rock bass, crappies, and suckers, have been placed in Jackson Creek above Yellow-Wood Lake Dam. Thousands upon thousands of fingerlings stock the lake. Artificial shelters for fish have been placed on the lake bottom.

To attend to the needs of the future, two fish-rearing ponds have been built below the dam. Each pond covers about three-fourths of an acre, and each is fed by a pipe line extending from the dam.

## A Venture in Cooperation

Labor for the development work done on the project has been furnished by the Works Progress Administration. Throughout the inception and progress of the work, there has been close and sympathetic cooperation by State and local authorities and individuals. In particular, the Indiana Conservation Department has assisted in innumerable ways in making the Bean Blossom project a genuine cooperative program for substituting constructive use for destructive use of land. It is planned to turn the project over to that agency of the State of Indiana for future administration.





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# THE ALLEGAN

LAND UTILIZATION

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U. S. Department of Agriculture  
PROJECT



A DEMONSTRATION IN BETTER LAND USE

U. S. BUREAU OF AGRICULTURAL ECONOMICS



## TOWARD BETTER USE OF MICHIGAN'S LAND

ON 34,000 acres of the sandy central portion of Allegan County, Mich., where three years ago acute social and economic problems existed because of inadvertent misuse of land, the Allegan Land Utilization Project now is building up a new and productive forest, a valuable recreation area, and a sanctuary for wildlife that is a source both of pleasure and income.

When the project was undertaken in 1935 the area was a prey to erosion. Families living there could not hope to earn a livelihood from the soil. Provision of schools and roads for these families was a heavy drain on other sections of the State, and relief costs were high.

The project has turned this tide of waste and misery. Now the area contains lakes and recreation sites that not only are a boon to local people, but that attract visitors from many great cities who wish to escape overcrowded resorts. A new pine forest is rising from previously denuded acres, a potential source of permanent revenue and a barrier to the disastrous effects of wind erosion. With food and cover restored, game and particularly wild ducks and geese are returning in great numbers to large marsh lands that are being developed for them. And on an experimental game farm and sanctuary, made possible by the project, valuable studies of wildlife are going forward.

### Pointing the Way for Others

The substitution of this orderly use for the unguided patterns that existed before the project was begun, has its lessons for other similar areas. The project is a part of a Nation-wide campaign to turn the submarginal areas of the country into assets, to change from progressively deteriorating uses into constructive, upbuilding uses.

In this campaign, the Bureau is attempting to deal with all of the problems created by this misuse of land. The problem in the Allegan area was not one of soil erosion alone, nor of cut-over forests alone, nor only that of pitifully low farm incomes. The trouble arose from a combination of all these and other factors. The land utilization project is demonstrating how these several problems can be dealt with in one blow by putting the land to its best uses. It is a demonstration that reaches far beyond the borders of the project. What has been accomplished at Allegan can be done elsewhere.

A generation ago, on the land now occupied by the project, a white-pine forest reared skyward on the uplands, and in the river bottoms and lowlands mixed hardwood trees grew. But the timbermen came and went, leaving the forest land cut over. Then came the farmers. All around this sandy spot in Allegan County were fertile farms. And when it was first cleared, the soil in the project area was fertile, too; but it was only the fertility of leaf mold, soon gone. When it had disappeared there was nothing but sand, which the wind soon began to blow out.

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NOTE ON COVER ILLUSTRATION.—Nearing the end of work on one of the dikes built on the project to convert swampland into shallow lakes. These afford a habitat for wildlife, keep down forest fires, and conserve water.

When the project was begun, 120 families were still living there, struggling vainly for a living from the soil, eked out by a small amount of outside employment. These people have been given help in moving to other and better farms. At this time, throughout the area thousands of fire-scarred stumps stand in idle and abandoned fields, mute speakers against unthrifty, short-sighted waste of land resources.

## Recreation for All

In developing the recreational phases of the project, one of the principal aims has been to utilize most of the project area for this purpose. Woodland trails have been built, winding along streams and bluffs. These provide beautiful vistas for hikers. In numerous instances, well-adapted spots have been cleared of underbrush. In others, outdoor fireplaces, picnic tables, wells for drinking water, and toilets have been constructed.

Several small lakes have been impounded, and a concrete dam across Swan Creek provides an 88-acre lake in an attractive setting of pine and oak forest. Four docks have been erected on these lakes, in conjunction with recreational centers at each.

A permanent youth camp, advantageously situated, offers commodious and comfortable quarters for such groups as Boy Scouts, Campfire Girls, 4-H Clubs, and others who may wish to use the project for week-end or longer visits. The camp is unusual in that it was constructed originally to house the workmen developing the project, but was so planned and built as to be readily convertible into its recreational use.

## Anchoring the Soil

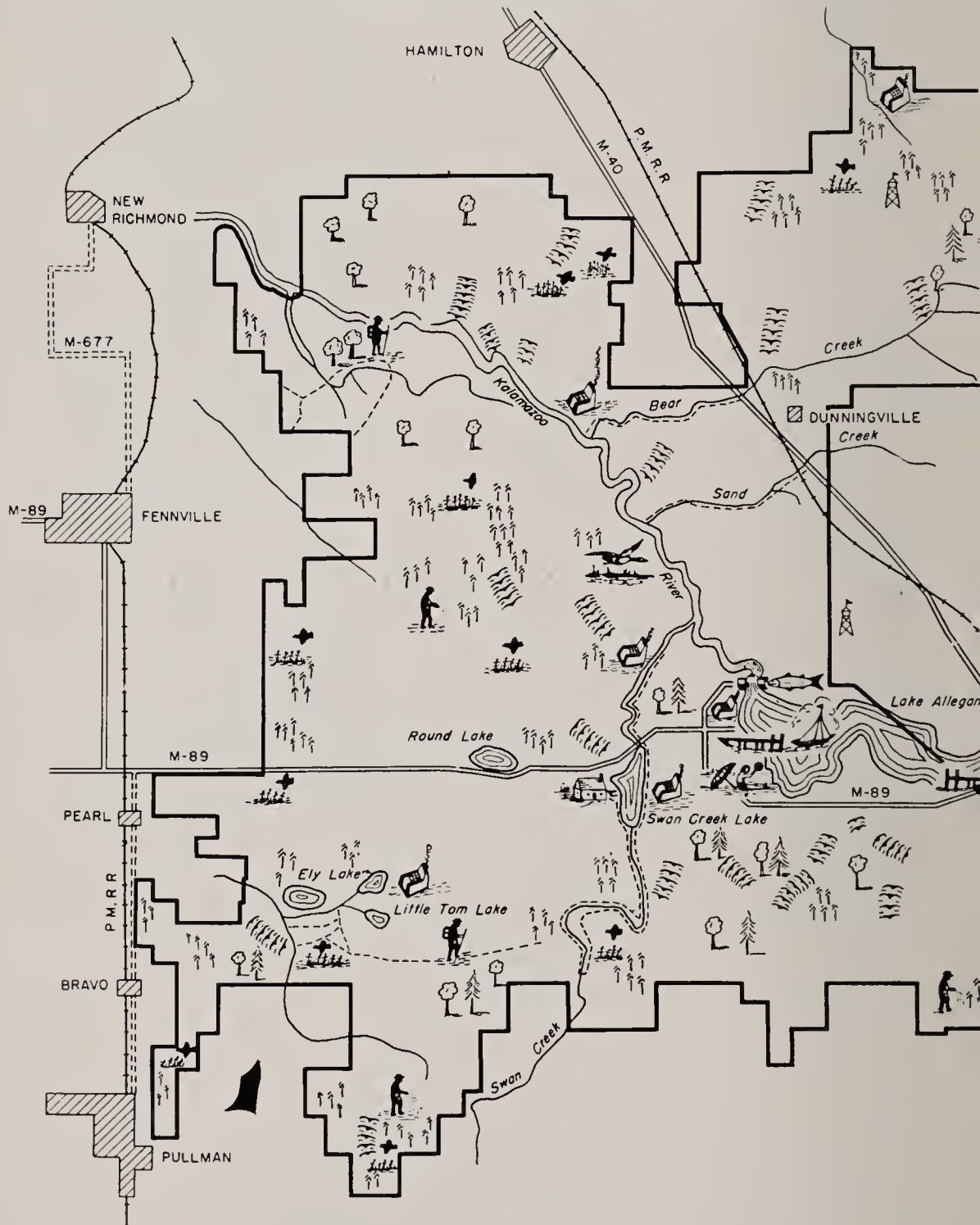
A unique feature of the Allegan project has been its development of methods to combat the destructive effects of wind blowing. Control of wind erosion on the exposed, sandy soil is still in an experimental stage, and the work done by the project has been in the nature of pioneering. Several hundred acres of eroded land have been given various types of brush protection. Some of this brush was in the form of rude fences. Other acres were simply given a covering of brush. As soon as the surface was stabilized and a cover of leaves had collected, jack pine, shrubs, and vines were planted. As a result, the shifting sand is being held in place until a cover develops that can hold it permanently.



One of the project's two giant fire towers that are helping to make the area's trees a permanent asset



# GENERAL DEVELOPMENT OF ALL



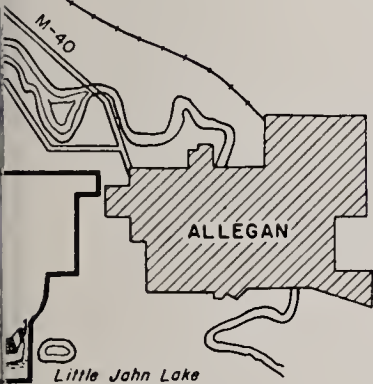
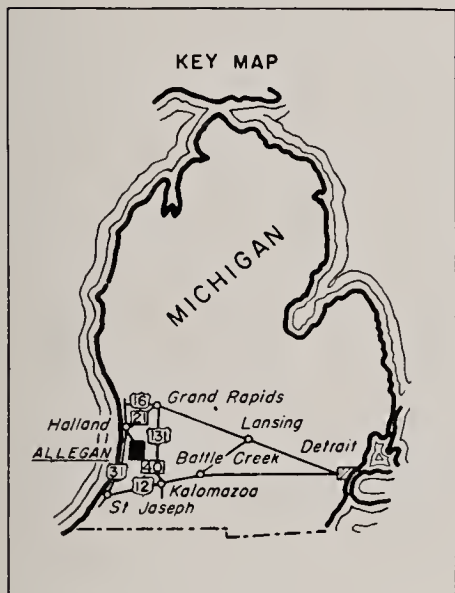
# ALLEGAN LAND UTILIZATION PROJECT

UNITED STATES  
DEPARTMENT OF AGRICULTURE

BUREAU OF  
AGRICULTURAL ECONOMICS

## LEGEND

Project Boundary	
Road	
Railroad	
Trail	
Lookout Tower	
Ranger Station	
Dom	
Wind And Water Erosion	
Londing Pier	
Reforestation	
Seeding	
Food Patch	
Beoch Improvement	
Picnic Ground	
Wild Life Demonstrotron	
Fish Rearing Pond	
Forestry	





But fundamental to the control of erosion and the return of the area to such other uses as recreation and wildlife, has been the rebuilding of the forest that once covered it. More than 7,000 acres of bare tracts and partially cut-over areas have been planted with more than 3,000,000 white and Norway pine seedlings. A nursery has been established, and a half million trees, shrubs, and vines have been grown and transplanted.

Much also has been done to conserve the existing stand of trees and to protect the new forest. Two great fire towers enable wardens to discover possible forest fires in any part of the area, and 24 miles of telephone line and 100 miles of fire lanes and truck trails make it easy to fight these blazes successfully.

## Wildlife, Now and for the Future

One of the prime assets of the project is its advantageous location on the flyway route of ducks and geese on their seasonal migrations. Hundreds of acres of swampland and overflow river-bottom lands provide excellent resting and breeding places for ducks and geese. These low-lying areas have been improved by construction of earthen dikes to impound the spring floodwaters and to hold a sufficient amount of moisture in the swamps throughout the dry season. Wild-fowl food has been increased in these swampy areas by the planting of a sufficient number of aquatic plants to provide an adequate supply throughout the year. This phase of the development work has brought rich rewards. Thousands of wild fowl visit the area and remain through the summer, some of them all year round.

The number of upland game birds—pheasants, quail, and similar species—has been increased by the planting of food patches of grain and food-bearing shrubs and vines to assure an ample supply of food throughout the year. The area abounds in small animal life including squirrels, raccoons, rabbits, and muskrats. The natural wild habitat of these animals has been improved by



Covering with brush one of the area's sand spots—a pioneer venture in control of wind erosion

21  
increasing the native shelter and food supply. The area is inhabited by the only herd of native white-tailed deer in the southern part of the State. An estimated 150 to 200 of these make their home along the river bottoms and upland wooded portions of the project. An ample natural food supply for these animals, and the protection afforded them by State laws, assure them a permanent existence.

The lakes and streams have been improved for fish, and have been abundantly stocked. The trout streams have been improved by speeding the flow of water, by narrowing the channels, and by placing gravel beds, rock riffles, deflectors, and pine stumps where they will be most effective in bettering conditions for trout. Willows have been planted along stretches of the banks to give shade and protection. Some of these are so dense as to serve as trout sanctuaries. The streams in the area were widely known trout streams, and are being restored to their former productiveness. A fish-rearing pond some 20 acres in size has been built near the Allegan municipal dam on the Kalamazoo River, and is used for the rearing of bluegills and similar species. This is supplied with a constant flow of water and is drained through a series of control gates and seining basins to the river below the dam.

A large area of fertile river-bottom land adjacent to Swan Creek and the Kalamazoo River, and bounded by wooded tracts, has been set aside as an experimental game farm and sanctuary. This land was formerly subject to severe flooding but has been protected by a dike. Here studies in wildlife are being carried on by the Michigan Conservation Department and by graduate students of wildlife from the University of Michigan and Michigan State College. Living quarters have been made available on this tract for a permanent superintendent of wildlife and a resident farmer, together with suitable quarters for students and assistants engaged in this work.

## Cooperation in Land Utilization

The cooperation between the project staff and the Michigan Department of Conservation mentioned in the paragraph above has extended to every phase of the project. Throughout the project's development, the department of conservation, to which the project will be turned over for future administration, has assisted in making it a success. Likewise, local and other State agencies and many individuals have helped. In this phase, too, the project has provided an object lesson, for the national land utilization program looks to this type of local cooperation to assure sound land use for the future.

### Land Utilization Program, Bureau of Agricultural Economics United States Department of Agriculture

L. E. Sawyer,  
Regional Director.

Melvin L. Moone,  
Project Manager.







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C no. 5



A newly built stock reservoir.

# THE LAND UTILIZATION PROGRAM FOR THE NORTHERN GREAT PLAINS





# ADJUSTING LAND USE TO HUMAN NEEDS IN THE NORTHERN GREAT PLAINS

**F**ARMERS and stockmen in those portions of the Northern Plains where droughts have been most frequent and destructive have come to realize that a considerable shift from crop farms to ranches and livestock units is essential if the land is to be economically used and families enabled to make a satisfactory living. Continuation of dry farming on land that has proved in the long run to be incapable of producing successful grain crops is unsound both individually and nationally. Furthermore, it prevents the land from being developed and managed as livestock range—the use for which it is best adapted.

Because much of the land in this region was settled under the 320- and 640-acre homestead laws, a great many farmers do not have sufficient land for livestock units. Before a shift can be made from crop farming to stock ranching, therefore, a large number of the operating units in the Plains have to be considerably enlarged. Only then will they be capable of supporting an adequate livestock enterprise.

Some farmers in these areas, after many hard years, have been able to get control of enough range to make a shift from crops to livestock. But many, living on small units of 160 to 640 acres, are unable to lease or buy additional grazing land and change over to a type of stock farming for which the land is suited.

Individual operators attempting to acquire control of sufficient range encounter many practical difficulties. They find the available grazing land broken up into so many small ownerships that they cannot obtain control either by lease or purchase. Abandoned homesteads, public domain, State land, railroad land, and operated farms are scrambled together in a confused pattern of ownership, making it difficult for a single stockman to block together and protect enough range to support an economic livestock unit.

The result of this situation is well known. Thousands of farmers, operating small dry-land tracts, can, after years of enduring effort, look forward only to a future of heavy indebtedness, failing crops, and crushing poverty. Even when they recognize the hopelessness of their situation, their inability to sell their holdings and move to a better location binds them to the land.

For the stockmen, conditions brought on by this scrambled use of land are hardly more favorable. Lands lie open to all comers; each spring marks a race for the new grass that is grazed off at a destructive rate. Year by year, even when there is no serious drought, the carrying capacity of the range decreases, diminishing the stockmen's chances of building up their herds. In some areas the carrying capacity of the range is now rated at only one-quarter of what it once was.





Symbol of the problem—an abandoned homestead that would not produce good wheat crops. The land was purchased and restored to range use.

Lack of opportunity to manage the range properly also has placed local residents of many areas at a comparative disadvantage with outsiders. Inadequate distribution of water has made it necessary for stock to concentrate around existing water holes. Moreover, “tramp herds,” in which resident stockmen have no interest, have frequently been able to graze off the best of the range, leaving small local operators without a chance to maintain family-size herds.

### A Problem of Land Utilization

This need for constructive management of range lands is but one aspect of land utilization in the Plains region—putting the land to its best long-time use. Development of better economic opportunities for Plains families through the improvement of range facilities cannot be accomplished all by itself. It is closely tied to other problems of land utilization. Submarginal grain farms, absentee-ownership of land, undersized stock units and farms, and the difficulties that counties experience in collecting taxes, form some of the specific economic problems of land utilization that all residents of this region are now forced to consider.

For if something is not done about these basic problems, we may expect increasing trouble. Despite occasional periods of comparatively heavy rainfall, soil and grass will continue to deteriorate, and more families will abandon their Plains homes as hope expires. The inability of counties to collect taxes will further undermine the financial structure of local govern-

ment, and lower the standards for schools, roads maintenance, and other public services that local government provides.

The Plains region has already seen too much of these difficulties to want more. The Nation as a whole has spent enough money for relief, uncollectible loans, and other subsidies in areas where land use has been badly organized, not to want to have the problem solved by sound rehabilitation.

What is needed for the Northern Plains is a program of land utilization that will enable the largest number of people to remain on the land on a sound, self-supporting basis. Such a plan for the use of land must have four major features:

**It must offer opportunity for all those who remain on the land to earn a satisfactory standard of living, insofar as possible independent of either outright or indirect relief.**

**It must insure the conservation of soil, grass, and water for the permanent stability of agriculture.**

**It must be flexible in character, so that operators can take advantage of the moist years as they come, and yet have reserves upon which to draw in the inevitable times of drought.**

**It must provide a sound economic basis for local government.**

More than 1,600 dams, largely for stock water, have been built on land utilization projects in the Northern Great Plains region, by the use of WPA labor.





It should be added that in all these respects, the goal of sound land utilization must be achieved through democratic processes which imply a maximum participation by men and women on the land in the formulation and execution of the programs of action.

## Land-Utilization Program of the BAE

The Bureau of Agricultural Economics, United States Department of Agriculture, is carrying out its land utilization program to help communities and individuals throughout depressed rural areas put their land to its most constructive use, and thereby stabilize their agricultural industry. Congress provided for this program in Title III of the Bankhead-Jones Farm Tenant Act of 1937, which authorized the Secretary of Agriculture to cooperate with State and local agencies in planning needed improvements in land utilization, and to help effect these adjustments by purchasing submarginal farm land and developing it for grazing, forestry, recreation, wildlife conservation, and other uses to which it is primarily suited.

Land utilization is, of course, merely a means of furthering the welfare of human beings. The Bureau's program is bringing direct aid in two ways to families in the areas wherein it functions. First, it is helping thousands of families which have been stranded on unproductive farm land, to sell out and move to other farms, or into other occupations, where greater opportunity of earning a good livelihood may be found. Second, it is helping those families who remain within the project areas to increase their economic opportunities by developing the land for the most productive long-term use that its physical and economic characteristics permit.

In the Northern Great Plains region, the Bureau's program is specifically directed toward the problem of shifting submarginal farm land to grazing use, and helping stockmen develop the necessary methods of placing the range under constructive management. Twenty-one projects are now under way in this region. The map on page 14 shows the area included in the Northern Great Plains region, and the location of the land-utilization projects.<sup>1</sup>

In the six States of the Northern Great Plains (see map), land-utilization work has been initiated in 36 counties. The total land included in these project areas is more than 22 million acres. In order to correct the misuse of land in these localities and establish more stable and economic farm and ranch operation, purchase by the Government of about 4,700,000 acres of submarginal land is necessary; more than 3 million acres have already been acquired, and a large part of the remainder is now under option.

The purpose of the program, however, is not merely to buy land; the Bureau is purchasing only as much land as is necessary to clear up a complicated pattern of ownership, and is putting the purchased tracts to use

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<sup>1</sup> Many of these projects were initiated as part of an emergency program under the Agricultural Adjustment Administration, and were successively transferred to the Resettlement and Farm Security Administrations. All are now consolidated in the Land-Utilization Program of the Bureau of Agricultural Economics.



Seeding and contour furrowing bring a badly scarred area back into range grass.

along with private land. Thus Government acquisition and development of between four and five million acres is making possible the sound utilization of more than 20 million acres in all.

### Cooperating on State Problems

Every area has its problems of land use that need study and investigation. Information as to why families in certain areas have been consistently unable to make a living from the land is needed for working out constructive programs of improvement. In each State the Bureau is cooperating with State and local agencies, and with local people, in analyzing land-use problems, and drawing up programs to correct the misuse of land. These broad, over-all investigations are the basis on which plans for individual land utilization projects are built.

In any general area, where farm poverty, the exhaustion or erosion of soil, and the financial embarrassment of local government, indicate that better use of the land can be developed, the Bureau and cooperating groups attempt to find the answers to four major questions:

**For what uses are the land resources of this area best suited?**

**What type of farming or ranching should be followed in order to use the land for its best purposes?**

**What sizes of operating units are likely to provide adequate incomes?**

**What changes in the present use of land are necessary to correct undesirable conditions and put the most suitable systems of farming into effect?**



In studying such an area, information gathered about soil, topography, climate, natural vegetation, and water supply, is supplemented by facts about land ownership, size of operating units, types of farms, incomes, crop yields, taxes and tax delinquency, relief loads, and other physical, economic, or social factors. The knowledge and opinions of local people are particularly important in enabling the Bureau's specialists and State cooperators to obtain a sound understanding of local conditions and needs. As the problem areas of each State are mapped out through this joint Federal-State work, and an understanding is reached of the general type of adjustments in land use that are needed, it becomes possible to initiate specific projects that will help achieve the goals of sound land use.

Although the land utilization projects that the Bureau of Agricultural Economics is carrying out revolve around the purchase and development of land, there are other important methods of correcting the pattern of land use that can often be applied. Rural zoning offers a way for rural communities to prevent the misuse of land. Soil conservation districts are playing an increasingly important part in the program of land use adjustment. The sound administration of tax-delinquent lands is an important tool in the hands of the States to help promote constructive land use. Most of these measures are outside the power of the Federal Government: they demand action by States or local agencies. Specialists on the Bureau's staff, however, have been studying these so-called "directional measures" and are available to help local communities apply any one or all of them to the solution of their local land use problems.

Destructive wind erosion results from cultivation of land that is unsuited to crops.



## HOW A LAND UTILIZATION PROJECT WORKS

Land utilization projects are established in localities selected as critical areas in the agriculture of the Plains. In most areas the symptoms of trouble are obvious:

A large percentage of the rural population in these maladjusted areas are on relief, because of the inability of the farms and stock units to yield sufficient incomes.

The carrying capacity of the range has been depleted by overgrazing.

Erosion is severe on cultivated lands where crop failures have been the rule rather than the exception.

Counties and other units of local government are burdened by heavy expenses and high tax delinquency.

In attempting to solve these problems, the cooperation of State and local agencies, and of local citizens, is sought. Although the Bureau can provide technical assistance to the program, and has a limited amount of money for the purchase and development of land, many of the actions necessary to encourage good land utilization must be taken by States and by local groups and individuals. Without the interest and active support of local people no land program can fully succeed.

### Finding Out the Facts

Finding out just what the facts are about land use is the first step in preparing a program of adjustment. In addition to a clear picture of present land use conditions, some knowledge of the history of an area is needed. The outstanding feature of this analysis is a classification of the land to show which tracts are suitable for farming, which for grazing, and which for winter feed production.

When the true character of the land is understood, and its present use is known, it is possible to plan adjustments that will put it to its best use. Maps showing individual operating units indicate how many farms are located on land that is submarginal for crop production, and which stock units need additional range to place them on a sustaining basis.

With these facts at hand, the plan of operation begins to take shape. Some operating units, hopeless from an economic viewpoint, are selected for purchase and conversion to range. Additional tracts are marked for acquisition to block out a range capable of sound management. A plan of range operation is drawn up revealing the need for more stock water in certain portions of the area. It is planned to make a more efficient use of bottom lands for production of winter feed and thus help operators climb towards a more secure position.

In place of the former pattern of land use, based on a hit-or-miss method of settlement, a plan of operation is developed that makes possible the best use and conservation of the land in accordance with natural and economic facts.





Fences and cattle guards constructed on land utilization projects make possible protection and sound management of the range.

## Building the Project

A threefold program of action gets under way when the plans for the project are approved by the Bureau and by local people. First, tracts are selected for purchase, and appraised to determine their fair value. Offers to buy are then made to the owners, and when options have been secured the necessary title examination and legal proceedings are carried out.

At the same time, through the organization of a cooperative grazing association by resident stockmen, the future management of the range area is provided for. Cooperative grazing associations, established under State law, or other groups of stockmen, lease from the Federal Government the lands purchased by the Bureau. They also lease State lands, county lands, and privately owned lands in order to block out range areas, thus extending the benefits of the land utilization program over a far larger area than purchase alone could effect. Both purchase and leasing of lands are carried out on a voluntary basis, no owner being required to sell his land if he does not wish to do so.

Following purchase of the land, and organization of the stockmen who will utilize the range, improvement of the area begins. Among the major types of work carried out are the construction of small dams creating stock-water reservoirs, development of wells and springs, salvaging of farm buildings purchased by the Government, rescuing to grass of abandoned crop lands, and fencing for better range management. In some areas, special

provisions are made to protect and encourage wildlife, particularly waterfowl, and small recreation sites have been developed for local use where practicable.

Development of the land utilization projects, in addition to accomplishing definite benefits for local land users, has also provided valuable work for relief labor. Most of the development to date has been done through the cooperation of the Works Progress Administration. In one project alone, as many as 325 small dams and other water facilities have been constructed, and employment given to 1,800 relief workers at one time.

## **Who Can Use the Project Lands?**

The purpose of the land utilization projects is to help local people obtain a more economic and permanently desirable use of their land resources. Acreages purchased for range use under this program, therefore, are made available to local stockmen, generally through the operation of a cooperative grazing district or other group organization, subject to provisions that will protect the land and the interests of all resident operators.

Through the operation of the program for land utilization that is worked out with each community, the Bureau intends to enable each stockman and farmer remaining in the area to operate an economically sound unit. All residents who wish to run stock on the range are eligible to enter into the grazing association or other group organization and apply for permits.

## **Grazing by Associations**

When lands purchased by the Bureau are leased to a cooperative grazing association, the permits to individuals are issued by the association. The rights of individual members of the association are in most cases established by State laws which provide for cooperative, democratic organization. The number of head of stock that each operator is entitled to run on the range is generally computed on the basis of the following major points:

**The total number of head of cattle for which the range will supply grass as shown by yearly examination.**

**The "dependency" of each operator upon the use of the range; that is, dependency because of location or because of previous use, or both.**

**The "commensurability"—that is, the number of head for which the operator can provide either winter range or supplementary feed.**

Fees for grazing privileges are determined by the grazing association in accordance with the laws and rules under which it operates.

## **Community Pastures**

In areas where it is not practical for a grazing association to be formed, because the range consists of smaller, separate areas, the grazing lands purchased and developed under the Bureau's land utilization program can be





A nesting and feeding place for waterfowl is created by introduction of feed plants in the upper end of a stock reservoir.

leased directly to small neighborhood groups of stockmen in the form of community pastures. Such a plan is more applicable to areas involving range for from 5 to 20 operators who run herds of moderate size.

Because establishment of a cooperative grazing district makes it possible to develop more flexible control of larger range areas, including public as well as private lands, the grazing association plan is generally favored.

## Land Utilization and Local Government

Land utilization has a direct and important influence on local government. Good land utilization, because it means the use of land for purposes to which it is best suited, helps create a sound local economy that will support efficient local government. Mistaken land use on the contrary tends to bring local expenditures for roads, schools, and other public services in submarginal areas out of line with tax income, and is frequently responsible for heavy tax delinquency.

One objective of the land-utilization program is to enable local governments to achieve a more efficient administration and stable financial condition insofar as land-use problems affect them. Purchase of submarginal farm lands has brought large amounts of money into county treasuries in the form of paid-up taxes that were delinquent for several years prior to sale. Moreover, the removal of families from scattered locations in poor land areas has in many instances enabled counties and school districts to close out some of the schools, or to discontinue roads no longer needed.

Positive steps by local government frequently can take further advantage of land utilization programs. For instance, the facts revealed by the classification of land will show county commissioners and other officials those areas in which expansion of roads and other public improvements will be most worth while, and where the character of the land makes unlikely the heavy settlement and high tax income necessary to support such improvements. Many counties are utilizing this information to discourage settlement in areas unsuited to cash-crop farming, and are concentrating their public improvement in areas shown to be clearly worth the investment.

A sound taxation system is one of the important factors that can help good land use. The shifting of land from crop production to stock ranching can hardly proceed successfully if the land is taxed by the county on an assessed valuation as farm land. If scientific investigation, on top of practical experience, shows the land to be suited only to grazing, the taxes should be adjusted accordingly. Otherwise other vain attempts to cultivate the land will be made, and communities will see a recurrence of land depletion and impoverishment of misguided families.

The fact that a large portion of the land purchased by the Bureau in its land utilization program has been tax delinquent for many years indicates that continuation of the land in private ownership would not yield much income to the taxing jurisdictions if current conditions prevail. Yet to insure some income to counties from this land, Congress has provided that 25 percent of the income from land purchased under this program shall be

Purchase of submarginal farms has made possible the closing of isolated schools and brought consequent savings to local government.





turned over to the counties in lieu of taxes. Vigorous enforcement of tax-delinquency laws, however, can develop a better source of income for counties: by taking title to tax-delinquent land, the counties can lease the tracts directly to the local grazing associations, and thus receive the whole income earned by the land.

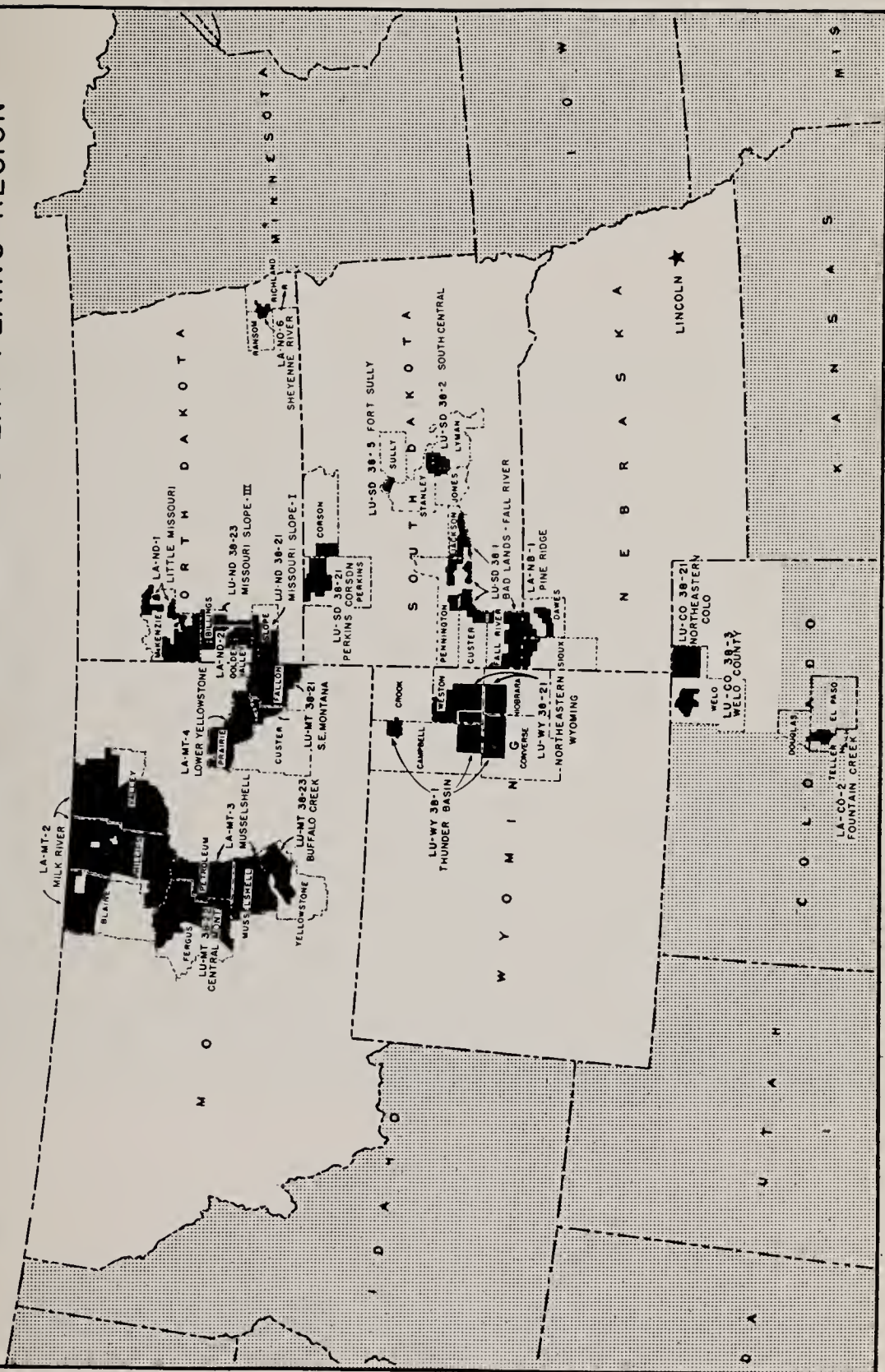
Intelligent cooperation of local governing agencies in a program of land utilization is but one example of the democratic process at work. It is based upon the fact that local people are the first to lose by a misuse of the land, and the first to gain from its wise employment.

## LAND PURCHASES AND ACREAGES COVERED BY ADJUSTMENT PROGRAM

From 1934 to June 30, 1939

Location of project	Counties	Acres purchased or to be purchased	Area in which adjustment is being made
			<i>Acres</i>
Fountain Creek, Colorado.....	Teller, El Paso, Douglas.....	12, 000	91, 000
Northeastern Colorado.....	Weld.....	202, 000	772, 000
Milk River, Montana.....	Blaine, Valley, Phillips.....	976, 000	7, 171, 000
Central Montana.....	Musselshell, Petroleum, Fergus.....	426, 000	4, 296, 000
Southeastern Montana.....	Custer, Fallon, Prairie.....	574, 000	2, 462, 000
Northwestern Nebraska.....	Dawes, Sioux.....	143, 000	446, 000
Western North Dakota.....	McKenzie, Billings, Golden Valley, Slope.	961, 000	2, 830, 000
Southeastern North Dakota.....	Ransom, Richland.....	70, 000	122, 000
Southwestern South Dakota.....	Custer, Jackson, Pennington, Fall River.	532, 000	1, 285, 000
Northwestern South Dakota.....	Perkins, Corson.....	177, 000	495, 000
Central South Dakota.....	Lyman, Stanley, Jones, Dewey, Sully---	137, 000	229, 000
Northeastern Wyoming.....	Campbell, Weston, Crook, Converse---	494, 000	1, 962, 000
Total.....	-----	4, 704, 000	22, 161, 000

# NORTHERN GREAT PLAINS REGION







Land Utilization Program, Bureau of Agricultural Economics  
United States Department of Agriculture

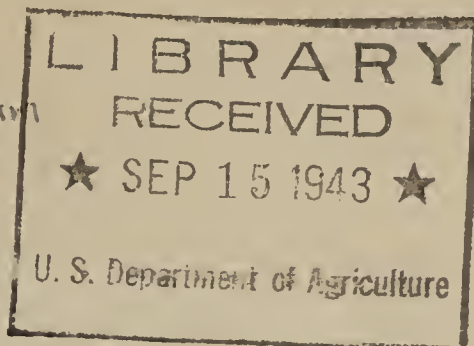
Northern Great Plains Region

Headquarters, Lincoln, Nebr.



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UNITED STATES DEPARTMENT OF AGRICULTURE  
U. S. SOIL CONSERVATION SERVICE, Northern  
Division  
Great plains  
region.



Supplement to Bulletin,  
"The Land Utilization Program for the  
Northern Great Plains."

This bulletin, "The Land Utilization Program for the Northern Great Plains," was published in 1938; nevertheless, it portrays the basic principles as accurately as if it had been written yesterday. In November, 1938, however, the Land Utilization -- or, more properly, land use adjustment -- program was transferred to the Soil Conservation Service. This is the technical agency of the U. S. Department of Agriculture whose job is to help farmers and ranchers work out solutions for their soil and water conservation problems, of which land use adjustment is one. The transfer came at the time when the emphasis was being changed from the acquisition to the management and use phases of the program.

Some adjustments in land use have been found necessary on practically every farm or ranch for which Soil Conservation Service technicians have helped the operator work out a soil and water conservation plan, but the Land Utilization program differs from the ordinary in that it demonstrates a feasible means of restoring productive enterprise in areas where attempts had been made to convert the land in whole communities to a form of agriculture which it could not support. This problem applies to a large part of South Dakota west of the Missouri river, where opportunities for successful crop farming are very limited and where the highest productive use of a large portion of the land is as range.

Up to the present, the Soil Conservation Service has helped the ranchers in the Land Utilization project areas to organize grazing associations, whose directors administer lands and carry out a careful management plan. In addition, four soil conservation districts are either adjacent to or overlap parts of the Land Utilization projects. They were organized by the farmers and ranchers in order to secure technician assistance in developing soil and water conservation plans on their own lands. Both the grazing associations and the soil conservation districts are organized under state law. The directors and supervisors are elected by the operators within the organizations, thus assuring local administration.

The federal government controls only two-fifths of the land in the Land Utilization projects, whose overall areas aggregate only 4 percent of South Dakota's total area. Three-fifths of the land in those projects is owned by the state, counties, corporations and individuals. Of the 733,000 acres of land the federal government purchased in South Dakota during the acquisition phase of the Land Utilization program, 107,000 acres were owned by the state and counties. The rest was purchased from individual owners and corporations, the individual owners virtually all being absentee owners.

(OVER) Lincoln, Nebr., 1943



resident owners no longer could not have to move to other land.

The land thus purchased represented less than 10 percent of the taxable valuation of the counties in which the Land Utilization projects are located. Further, as of January 1, 1935, when purchases were begun, 60 percent of all land in the counties where purchases were made had been tax-delinquent for 3 years or more. The purchase of the lands resulted in the receipt by the counties of \$142,797 in back taxes and \$43,218 for county-owned land which was sold. Money paid for the lands also gave opportunities for new starts in life to a large number of people who previously had the choice of walking off and leaving everything, if they had a place to go, or of staying until they lost their lands. In either case they would have had no funds to start anew.

The Soil Conservation Service leased the federally-controlled lands to the grazing associations on a long term under a grazing agreement, and the associations also secured leases on such other lands in their areas as they could. The grazing association directors issued grazing permits on these leased lands, sometimes blocking out operating units and at other places furnishing grazing in common-use areas. The number of livestock permitted by the association directors is determined by the condition of the range.

Where before the Land Utilization projects got into operation a goodly portion of the people in the project areas were on relief and with little hope of bettering their position, the people now there have control of units which give reasonable assurance of providing good livings. This was done without disturbing those who had succeeded in establishing adequate units without the help of the association. The closing of unnecessary schools and the discontinuance of unneeded roads had reduced county expenses, while the counties receive 25 percent of all the income from the federally-owned lands. To date this totals \$38,037 in lieu of taxes formerly levied but too often not paid.

Use of the lands controlled by the grazing associations -- that is, the federally-owned and other lands they have leased, but not including the operators' lands nor units assembled independently -- now is carried on under 745 permits, of which 138 are for winter grazing, use of cropland and hayland, and purposes other than grazing. The number of animal units covered by permits is 219,215, which is still below the estimated capacity of the rangelands but shows excellent progress in stocking the range following the severe setbacks during the drought. No longer is there a mad scramble to get onto range first, because trespassing or nomadic herds are excluded from the association lands.

Results of the management of the lands in the Land Utilization projects are readily evident. The range grasses have been allowed to recover their full vigor during the favorable years, so that increased carrying capacity is more than temporary. There is a good supply of reserve feed on the ground, in contrast to the situation on similar land where overuse keeps the grass eaten so closely that the plants have no reserve to weather dry spells. Right now, management of the Land Utilization projects has helped to increase their ability to produce meat and wool to meet the wartime needs, but more than that, these lands are in condition to produce even more in the following years.